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TEACHER-CHILD INTERACTION THERAPY:  
EFFICACY WITH A CLINICAL PRESCHOOL POPULATION

A Dissertation

Submitted to the Department of Counseling, Psychology, and Special Education

School of Education

Duquesne University

In partial fulfillment of the requirements for  
the degree of Doctor of Philosophy

By

Kristen Friedrich Schaffner

May 2013



**DUQUESNE UNIVERSITY**  
**SCHOOL OF EDUCATION**  
**Department of Counseling, Psychology, and Special Education**

***Dissertation***

Submitted in partial fulfillment of the requirements  
for the degree  
Doctor of Philosophy (Ph.D.)

**School Psychology Doctoral Program**

***Presented by:***

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B.A. Psychology, Spanish, Duquesne University, 2008  
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**December 17, 2012**

**TEACHER-CHILD INTERACTION THERAPY:  
EFFICACY WITH A CLINICAL PRESCHOOL POPULATION**

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# ABSTRACT

## TEACHER-CHILD INTERACTION THERAPY: EFFICACY WITH A CLINICAL PRESCHOOL POPULATION

By

Kristen Friedrich Schaffner

May 2013

Dissertation supervised by Kara E. McGoe, PhD and Elizabeth McCallum, PhD.

Teacher-Child Interaction Therapy (TCIT), which is an adaptation of the empirically-based treatment of Parent-Child Interaction Therapy (PCIT), addresses the needs of children and teachers through increasing positive teacher-child interactions while educating teachers on effective discipline techniques. The theoretical and empirical basis for PCIT provides the foundation for the appropriate and effective application of the adaptation of this treatment model for use with teachers.

The efficacy of Teacher-Child-Interaction Therapy (TCIT) with a clinical preschool population was evaluated through a single subject A-B design conducted across subjects. The current study examined the impact of the intervention, TCIT, on child behavior, teacher skill development and use, as well as the quality of teacher-child relationships. Results suggest that the intervention positively impacted the behavior of

preschool children diagnosed with a Disruptive Behavior Disorder, as indicated by a reduction of disruptive behaviors and increase of prosocial behaviors within a therapeutic classroom setting. Additionally, teacher skill use and the quality of teacher-child relationships were evaluated following implementation of the TCIT intervention. Findings indicate that the intervention positively impacted teachers' use of the positive attention skills over the course of the intervention.

This study, which examined the efficacy of Teacher-Child Interaction Therapy with preschool-aged children diagnosed with a Disruptive Behavior Disorder, provides initial support for the implementation of a relationship-based technique to support teachers in addressing the disruptive behaviors of children within a classroom environment.

## DEDICATION

To my parents – As many scholars and authors have attested over the years, parents have the opportunity to give their children two incredible gifts. One is roots, the other is wings. I have been gifted each of these blessings to the fullest extent possible throughout my life. I cannot thank you enough for being such supportive, wonderful, and loving parents. You have always helped me find my journey and path in life, even when I was not sure of where it would lead. From childhood to the first day in my freshman dorm at Duquesne, you have always guided me to find my true calling and not let my fears conquer my destiny. I am not able to express my gratitude enough. This path, degree, and journey would not have been possible without you. I love you both dearly.

To my husband – Curtis, you have been, will continue to be, and always will be the rational to my emotional, calm to my storm, and organization to my chaos. You have given me endless support throughout this journey, tirelessly encouraging me to persevere to achieve my goals. I have lost count of the number of times I have found support and strength in you, your advice, your love, and your unfailing faith in me. I truly believe that you help me become a better woman each and every day. I could not be happier to have shared this journey with you and attribute many of my successes to you. I love you.

To my friends, family and loved ones – Thank you for the support and encouragement you have provided each in your own way throughout my education. I am blessed and grateful to have such an incredible network of people to provide infinite guidance and reassurance. Especially to Lindsey – thank you for always traveling beside me along this winding road of life.

## ACKNOWLEDGEMENT

To my Co-Chairs, Dr. McGoey and Dr. McCallum – I thank you immensely for the endless guidance, support, and mentoring you have provided throughout this process. Most importantly, however, I would like to thank you both for helping me truly discover my niche in the world of school psychology and igniting my passion for research. Had you both not shared your knowledge and skill with single subject research design, I likely would not have persevered on this path. I thank you for your time, efforts, and enthusiasm.

To my Theiss “family” - Lindsey, Kim, and Dianne - If it were not for this incredible team of passionate individuals, I would not have seen my vision and ideas come to fruition. From endless hours of planning and problem solving, to helping me overcome chaos, confusion, and stress, to countless coffee-runs, I cannot thank you all enough for your support. You have provided me with practical and emotional guidance to complete this journey. Each day I am re-inspired and rejuvenated to work with each of you towards a common goal and passion. Thank you for providing me with the opportunity to work beside each of you every day.



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## LIST OF ABBREVIATIONS

Parent-Child Interaction Therapy (PCIT)

Teacher- Child Interaction Therapy (TCIT)

Praise Reflect Imitate Describe Enthusiasm (PRIDE)

*Preschool Observation Code* (POC)

*Dyadic Parent-Child Interaction Coding System* (DPICS)

## Chapter I: Introduction

### **Introduction**

Individuals working in early childhood settings, including teachers and child care providers, often indicate that the challenging behavior of children is the most difficult aspect of their work (Raver & Knitzer, 2002). Furthermore, it is common for teachers in early childhood settings to report a lack of self-confidence and preparation in effectively addressing the needs of children with behavior problems. Notably, empirical evidence (e.g., Giliiam, 2005; Raver & Knitzer, 2002) suggests that a variety of adverse outcomes are linked to behavior problems in early childhood if not addressed appropriately and early. When considering the importance of the promotion of the successful growth and development of the nation's preschool population, this area of need is of pressing concern.

### **Significance of the Problem**

The rate of children exhibiting challenging behaviors and psychosocial disorders in early childhood is estimated to be between 10 and 22% (Hawkins & Walsh, 2001; Raver & Knitzer, 2002). In other words, in a preschool classroom of 20 children, there is likely to be two to four children exhibiting challenging behaviors. Notably, using data from the United States Department of Health and Human Services, Warner and Pottick (2006) found that of preschoolers receiving services for mental health problems, over a third were considered to be "severely impaired" in terms of their Global Assessment of Functioning (GAF) scores (p. 478). GAF scores, as outlined in the Diagnostic and Statistical Manual of Mental Disorders (2000), are an indication of an individual's overall level of functioning. Scores range from 0 to 100, with a score of 1

indicating “clear expectation of death” and a score of 100 suggesting “superior functioning” (p. 34).

Despite the prevalence of challenging behaviors and mental health needs in the early childhood population, there remains a lack of confidence and preparation in early childhood educators and child care employees to address such needs. As previously indicated, early childhood educators report the challenges of addressing children’s difficult behaviors (Raver & Knitzer, 2002). Furthermore, faculty of institutions of higher education working in programs of early childhood education as well as early childhood special education report similar limitations. In a recently conducted survey, faculty members within these programs rated their students lowest on their preparation to design and implement interventions to address challenging behaviors (Hemmeter, Santos, & Ostrosky, 2008).

To further compound these concerns, research has suggested a variety of adverse outcomes associated with behavioral needs not being addressed. For instance, children exhibiting antisocial or aggressive behavior are less likely to receive positive feedback and instruction from teachers, more likely to be held back early in their educational career and drop out of school in adolescence, as well as less likely to succeed in academic tasks and more likely to engage in delinquent behavior (Raver & Knitzer, 2002). Additionally, children in early childhood classrooms are being expelled or permanently removed from an educational setting, at a rate 3.2 times higher than that of children in grades K-12 (Gilliam, 2005).

It is clear that these pressing needs in early childhood education must be addressed in order for children with challenging behaviors and mental health concerns to

be successful. As indicated by recent empirical evidence (e.g., Giliiam, 2005; Raver & Knitzer, 2002), the negative impact of behavior problems that are not adequately addressed in early childhood are not only immediate, but long lasting. In order to provide early childhood educators with the resources and training required to adequately address the needs of children with challenging behaviors, several researchers (e.g. Filcheck, McNeilGreco, & Bernard, 2004; Lyon et al., 2009; McIntosh, 2010; McIntosh, Rizza, & Bliss, 2000; Tiano & McNeil, 2006) have implemented an adaptation of the empirically-supported treatment Parent-Child Interaction Therapy (PCIT) with teachers within early childhood settings.

This adaptation of PCIT, known as Teacher-Child Interaction Therapy (TCIT), helps to address children's behavioral needs through increasing positive teacher-child interactions while educating teachers on effective discipline techniques. The theoretical and empirical basis for PCIT provides the foundation for the appropriate and effective application of the adaptation of this treatment model for use with teachers.

### **Theoretical Basis**

The theoretical foundation of PCIT, which provides the foundation for TCIT, draws from the integration of several theories relevant to developmental theory and parent-child interactions. At the center of PCIT's treatment model is Diana Baumrind's (1966) theory of parenting; in particular, the authoritative parenting style (Eyberg & Bussing, 2010; Funderbunk & Eyberg, 2010; Zissser & Eyberg, 2010). The authoritative parenting style balances nurturance and warmth with firm limit-setting (Baumrind, 1966), which aligns with the treatment goals of PCIT. In order for parents to learn and adopt this style, PCIT draws from both attachment theory as well as social learning theory and

operant conditioning (McNeil & Hembree-Kigin, 2010). Baumrind's theory provides the framework to integrate the aforementioned theories to result in optimal child outcomes (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010).

### **Baumrind's Theory of Developmental Parenting**

Similar to the findings of coercion theory, Diane Baumrind's theory of developmental parenting (1966) also emphasizes the desired balance between warmth and discipline in parenting. The ideal balance is achieved through the authoritative parenting style. Similarly, the therapeutic goals of PCIT are designed to achieve the same end (Eyberg & Bussing, 2010). Each phase of PCIT aligns with one side of the balanced equation, including addresses parental warmth and responsiveness while teaching appropriate disciplinary techniques and limit-setting to achieve child compliance.

### **Attachment Theory**

Attachment, according to Bowlby (1978), refers to the tendency of humans to make strong, warm bonds with others. Secure attachment develops when interactions between children and caregivers are consistent, warm, and responsive (Bowlby, 1969). The benefits of secure attachment between children and caregivers have been extensively demonstrated. For instance, secure attachments has been associated with higher levels of academic skills (Aviezer, Resnick, Sagi, & Gini, 2002), cognitive engagement, communication skills (Moss & St-Laurent, 2001), concept development in preschool (Pianta, Nimetz, & Bennett, 2002), as well as superior problem solving skills in early childhood (Frankel & Bates, 1990).

Similarly, secure attachment has been linked to a variety of social outcomes. Children who are securely attached are rated as having better social skills than their peers



with insecure attachments (Erickson, Sroufe, & Egeland, 1985; Hodges, Finnegan, & Perry, 1999), are more popular with peers in preschool (DeMulder, Denham, Schmidt, & Mitchell, 2000), are better socially adjusted during the transition to kindergarten (Pinata et al., 2002), and exhibit more emotional maturity (Aviezer, Resnick, Sagi, & Gini, 2002).

However, as indicated by Bowlby (1969, 1978), although it is common for a child's attachment figure to be a parent, children can also form attachment bonds with any consistent caregiver. As a result, researchers have also explored the impact of teacher-child relationships. Research has suggested that it is possible for children with insecure attachment to bond with teachers (Bergin & Bergin, 2009). High quality teacher-child relationships have been found to be associated with higher levels of academic achievement (Hamre & Pianta, 2001; O'Conner & McCartney, 2007), gains in classroom participation, increased obedience in the classroom, and increased fondness of school (Ladd & Burgess, 2001). Notably, Howes and colleagues (1998) found that children's ratings of their relationships with teachers at age nine were predicted by the quality of relationships with their first (preschool) teachers.

When considering the theoretical and empirical basis for attachment theory, the role of early childhood educators in building warm, responsive relationships with children is clear. Especially for children exhibiting challenging behaviors, early childhood education centers provide an environment supportive of warm, responsive relationships due to the structure of the curriculum and daily routines. When considering the impact of teacher-child relationships, especially during the preschool years, adapting PCIT to use with teachers is empirically and theoretically based.

## **Social Learning Theory**

PCIT, and in turn TCIT, relies on the principles of social learning theory, and coercion theory in particular, to conceptualize how negative child-caregiver interactions influence a child's behaviors. Social learning theory, as described by Bandura (1977), theorizes human behavior and learning in terms of the interplay between direct and vicarious experiences within the context of biological factors. Social learning theory purports that human functioning is not the result of strictly internal or external forces; rather it is a continuous interplay and interaction between the two. Following these basic tenants of social learning theory, coercion theory applies this understanding of human behavior and learning to parent-child interactions (Granic & Patterson, 2006).

Coercion theory was first developed by scientists from the Oregon Social Learning Center (OSLC) following the observation of hundreds of parent-child interactions and the resulting patterns in these exchanges (Granic & Patterson, 2006). Coercion theory refers to a “model of behavioral contingencies that explain how parents and children mutually ‘train’ each other to behave in ways” which increases children's problem behaviors while decreasing parents' ability to manage such behaviors (Granic & Patterson, 2006, p. 101).

The structure and framework of PCIT, as well as TCIT, works to break this cycle of negativity described through coercion theory through two means. First, one treatment goal is to foster warm, nurturing parent-child interactions (Eyberg & Bussing, 2010), which supersedes the lack of affection and responsiveness that characterizes the harsh parenting described in coercion theory (Scaramella & Leve, 2004). Similarly, through PCIT and TCIT, parents and educators master effective and consistent discipline

techniques. Again, the harsh parenting style described in coercion theory consists of fluctuations between over involvement and under involvement in parenting (Scaramella & Leve, 2004). During treatment, the focus on consistent and effective discipline techniques will alleviate these inappropriate responses to children's challenging behaviors.

### **Operant Behavior**

In addition to the previously discussed theoretical foundations, PCIT and TCIT are also built on several principles guiding operant behavior theory. In terms of operant conditioning, behavior is understood in terms of stimulus, response, and reinforcement (Skinner, 1963). In other words, behavior is more than simply the relationship between stimulus and response.

When considering the interaction between stimulus, response, and reinforcement, it is imperative to note that reinforcement refers to the strengthening of a response (Skinner, 1963). Treatment through PCIT or TCIT relies on these basic tenants of operant behavior theory to guide learning during not only parent-child interactions, but also during interactions between parents and the therapist (Eyberg & Bussing, 2010). In other words, parents and teachers are taught to reinforce children's appropriate behaviors while using strategies to decrease undesirable behavior. Similarly, the therapist reinforces parents and teachers for using desirable techniques.

### **Literature Review**

As previously indicated, researchers have recently explored the effectiveness of the adaptations of PCIT to use with teachers through TCIT. The empirical base for TCIT has grown to include a variety of methodological designs including intervention studies

and preventive studies. Preliminary findings have demonstrated the success of TCIT in impacting teacher behaviors. Additionally, the results have suggested initial positive outcomes of TCIT on child behavior.

In terms of teacher outcomes, several studies have indicated the positive impact of TCIT on teachers' behaviors. Throughout the implementation of TCIT, teachers are taught to use more positive communication skills. These skills include labeled praise (stating what you specifically like about the child's behavior), behavior descriptions (talking about what the child is doing), and reflections (repeating or paraphrasing what the child says) as well as the technique of providing attention to desired behaviors (McNeil & Hembree-Kigin, 2010). Results indicate that teachers used more positive communication skills taught following TCIT, including labeled praise, behavior descriptions, and reflections (Filcheck, McNeil, Grecco, & Bernard, 2004; McIntosh, 2010; McIntosh, Rizza, & Bliss, 2000; Tiano & McNeil, 2006) as well as increased instances of positive attention skills (Lyon et al., 2009).

When considering the impact of treatment on child behavior, empirical evidence has demonstrated initial support for TCIT in this domain. Following TCIT treatment, results have suggested increased child compliance to teacher commands (Filcheck et al., 2004; McIntosh, 2010; McIntosh et al., 2000), decreased disruptive and inappropriate behaviors (Filcheck et al., 2004; McIntosh et al., 2000), including aggressive behaviors (McIntosh, 2010), and decreased use of time-out (Tiano & McNeil, 2006).

Despite these initial results indicating the potential of TCIT to positively impact both teacher and child behavior, there are some methodological limitations regarding these findings. For instance, Tiano and McNeil (2006) as well as Lyon and colleagues

(2009) implemented TCIT at a classroom level within a preventative framework. As a result, Lyon and colleagues (2009) did not include measures of child behavior.

Additionally, although Tiano and McNeil (2006) did consider child outcomes, the results were not especially informative. In terms of classroom manageability, as rated by the teacher, and inappropriate child behavior, as measured by the *Revised Edition of the School Observation Coding System* (Jacobs, Boggs, & Eyeberg, 2000), child behavior improved in both treatment and control groups. The authors note that this could be attributed to the low levels of inappropriate behavior during the pre-treatment phase as well as maturation of the students. Therefore, due to the preventative model of these studies, little data regarding the impact of TCIT on child outcomes can be obtained.

Even in intervention studies, there are some limitations regarding child outcomes of TCIT. Case studies conducted by McIntosh and colleagues (2000) and McIntosh (2010) both found support for improved child outcomes following TCIT. McIntosh and colleagues (2000) measured child outcomes only in terms of the child's response to teacher commands (compliance/noncompliance) and instances of disruptive behavior during a 5 minute time sampling procedure during Teacher Directed Interaction. As a result, these measures of child behavior are not necessarily indicative of general classroom behavior.

McIntosh (2010), however, did complete four twenty minute observation sessions to obtain frequency counts of target behaviors (hitting, kicking, yelling, non-compliance, arguing). The results of this case study did suggest positive outcomes on child behavior. However, because both studies (McIntosh, 2010; McIntosh et al., 2000) were case studies (n=1), the results cannot necessarily be generalized across populations and settings.

Finally, Filcheck and colleagues (2004) also found a decrease in inappropriate child behavior following the implementation of TCIT, as measured by the *School Observation Coding System* (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991). However, TCIT was implemented in a classroom following the implementation of a token economy (The Levels System). Because both interventions were implemented with the same classroom population and teacher, it is unclear if carry-over effects were present.

### **The Problem Statement**

At present, there are only a handful of studies that have examined the impact of TCIT on both child and teacher behavior. Likewise, even fewer studies have explored the use of TCIT as an intervention (versus a preventative strategy) for responding to children's disruptive and challenging behaviors. PCIT, the basis of TCIT, was first developed in the 1970s by Sheila Eyberg for use with children in early childhood exhibiting significant behavior problems.

Presently PCIT is an evidence-based treatment for preschool-aged children displaying disruptive and externalizing behaviors and their parents (Funderburk & Eyberg, 2010).

Since TCIT is theoretically based upon the foundations of PCIT, it is notable that previous studies have not adequately measured the impact of TCIT on child behaviors, which is the original focus of PCIT. Although PCIT, and hence, TCIT, focus on parent and child behaviors, the ultimate basis for treatment is challenging child behavior, which is reinforced and maintained through negative parent-child interactions. Therefore, parent (or teacher) behavior is targeted in order to change child behavior.

Likewise, empirical support has documented the successful use of PCIT with clinically significant populations. For example, following completion of PCIT, a significant reduction in symptoms associated with Oppositional Defiant Disorder, Conduct Disorder, and Attention-Deficit Hyperactivity Disorder have been reported (Eisenstadt et al., 1993). Notably, these gains have been maintained for one (Boggs et al., 2004) to six years (Hood & Eyberg, 2003) following treatment. However, despite this evidence, TCIT has not yet been implemented with a clinically significant population.

Previously reviewed literature has demonstrated the needs of early childhood educators regarding challenging and disruptive child behavior. Given this need, in conjunction with the prevalence of early childhood behavior and mental health problems, further research is required to explore the impact of TCIT on both child and teacher behavior. Practically and clinically, changes in teacher behavior (such as increases in labeled praise) are irrelevant if changes in child behavior are not produced.

### **Research Questions and Hypotheses**

The current empirical study will attempt to address the limitations of previous literature through answering the following research questions:

*Research Question 1:* Does TCIT training significantly reduce the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting?

*Hypothesis 1:* TCIT training will significantly reduce the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting as measured by the POC.

*Research Question 2:* Does TCIT training significantly increase prosocial behavior of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting?

*Hypothesis 2:* TCIT training will significantly increase prosocial behavior of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting, as measures by the POC.

*Research Question 3:* Does TCIT training positively impact teacher-child relationships and increase teachers' use of positive attention skills within the classroom environment?

*Hypothesis 3:* Teacher-child interactions, as measured by the POC, and teachers' use of positive attention skills, as measured by the DPICS, will improve following the implementation of TCIT.

*Research Question 4:* Are behavioral gains of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting maintained following the removal of weekly classroom TCIT coaching?

*Hypothesis 4:* Behavioral gains of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting will be maintained following the removal of weekly TCIT coaching sessions.

### **Conclusion and Summary**

Empirical evidence has suggested a prevalence and severity of behavioral and mental health needs of children in early childhood (e.g., Hawkins & Walsh, 2001; Raver & Knitzer, 2002, Warner & Pottick, 2006). However, early childhood educators report a lack of confidence and training when addressing these needs of children in their classrooms and centers (Hemmeter et al., 2008; Raver & Knitzer, 2002). This lack of



adequate preparation in conjunction with systematic problems within early childhood settings, including inconsistent standards for teacher qualifications and professional development, lower salaries compared to K-12 educators, higher rates of staff turnover (Whitebrook et al., 2009), suggests a clear need for intervention at this level.

TCIT, which is an adaptation of the empirically-based treatment of PCIT, addresses the needs of children and teachers through increasing positive teacher-child interactions while educating teachers on effective discipline techniques. The theoretical and empirical basis for PCIT provides the foundation for the appropriate and effective application of the adaptation of this treatment model for use with teachers.

The current study proposed to investigate the use of TCIT with a clinically significant early childhood population. Results will explore the impact of treatment, not only on teacher outcomes but child outcomes as well. Through measuring child outcomes and considering clinically significant behaviors and symptoms, this study will significantly add to the existing literature base.

## Chapter II: Literature Review

### **Historical Background**

Over the past several years, a cultural shift has occurred changing the role of early childhood education. A combination of factors has contributed to this transformation. First, research on brain development and early learning has resulted in a new perspective regarding preschool education. Now, instead of being viewed as a casual opportunity for play, preschool is widely accepted as playing a significant role in the social, emotional, and cognitive development of children (Donahue, Falk, & Provet, 2000). Likewise, due to increasingly challenging curriculum and academic expectations being introduced in earlier grades, early childhood educators and parents feel added pressure to ensure that children will “enter school ready to learn” (Raver & Knitzer, 2008, p.12).

According to the United States Department of Education (2007) the number of three- and four-year olds attending preschools increased from 20% to 54% from 1970 to 2005. This estimate includes children enrolled in public and private early childhood settings. Because preschool attendance is not mandated by law, this increase in preschool enrollment may suggest an increasing acknowledgement of the role and importance of early childhood education.

### **Early Childhood Mental Health**

As more children are attending preschools and centers, the number of children with disabilities being included in typical early childhood classrooms has also expanded. As a result, preschool teachers and daycare staff are responsible for the education of children with a wide range of needs (Harris & Klein, 2002). From reviewing recent

literature, the prevalence of young children exhibiting problem behavior in this population is estimated to be approximately 10%. Similarly, Hawkins and Walsh (2001) found that the rate of psychosocial disorders among preschoolers range between 13% and 22% of the population and that the severity of problem behaviors has increased over time. Warner and Pottick (2006), using data from the United States Department of Health and Human Services, Center for Mental Health Services, analyzed the current status of mental health problems in early childhood. Their findings indicated that over a third of preschoolers identified as receiving mental health services were considered to be “severely impaired” when considering their Global Assessment of Functioning scores (p. 478). Furthermore, nearly half (40%) of the preschool children receiving mental health services were minorities.

**Adverse outcomes.** In addition to the prevalence of clinically significant mental health problems among children in early childhood, evidence also suggests potential adverse outcomes for children in early childhood settings exhibiting emotional and behavior problems. For instance, Gilliam (2005) found that children in prekindergarten were expelled due to behavioral concerns at a rate 3.2 times higher than the national rate for expulsion of children in grades Kindergarten through 12. Results also indicated that African-American students were expelled at a rate twice as high as European American preschoolers.

However, as access to classroom-based mental health consultation increased, the percentage of children expelled decreased. Gilliam (2005) hypothesized that this was due to consultants providing teachers with strategies for addressing challenging student behavior. The availability of resources in general could also be a mediating factor in this

relationship. As indicated by Gilliam (2005), the efficacy of mental health consultation in early childhood has not been extensively studied. Therefore, lower expulsion rates could be related to the consultation provided or overall access to support. In other words, because not all early childhood centers have the opportunity to seek consultation, those centers with supports likely have additional resources available such as in-service trainings or administrative support.

In addition to the alarming rate of expulsion among preschoolers, addressing the needs of children in early childhood is imperative to their future success. In a synthesis of research, Raver and Knitzer (2002) concluded that young children whose behavior is antisocial or aggressive are less likely to receive positive feedback and instruction from teachers, even in preschool. Additionally, children who demonstrate these behaviors are more likely to be held back early in their educational career and drop out during adolescence. They also are less likely to succeed in academic tasks and more likely to engage in delinquent behavior. In terms of social and emotional problems, Raver and Knitzer (2008) found similar results. Young children who endure persistent economic, social, and psychological stressors are at risk for poor social, emotional, and cognitive outcomes. The data suggests that about 32% of young children are affected by at least one risk factor, with 16% influenced by two or more.

**Limitations in early childhood education.** Despite the prevalence of challenging behaviors and mental health needs in early childhood, teachers working with this population may not be adequately prepared to address these needs. Early childhood educators indicate that addressing children's behavior problems is the most significant challenge they face (Raver & Knitzer, 2002). Consistent with this report, in a survey of

institutions of higher education in early childhood education and early childhood special education, faculty rated their students lowest on their preparation to design and implement interventions designed to address challenging behaviors (Hemmeter, Santos, & Ostrosky, 2008).

In addition to concerns related to staff development, systemic issues in early childhood education are present (Whitebook, Bomby, Bellm, Sakai, & Kipnis, 2009). Compared to K-12 programs, standards for teacher qualification in early childhood settings vary extensively. For example, professional development, which is defined broadly in early childhood settings, can range from attending informal workshops to pursuing a college level degree. Furthermore, many states do not even mandate continuing education credits for early childhood teachers. Similarly, early childhood educators' salaries and wages tend to be lower than educators in K-12, and early childhood programs tend to have substantially higher rates of staff turnover than K-12 schools (Whitebrook et al., 2009). Finally, many early childhood locations lack adequate resources, time, materials, space, and staff to meet the varied needs of preschool children (Harris & Klein, 2002).

### **The Need for Intervention**

When considering the increasingly diverse and pressing needs of preschool children, the adverse outcomes that can result when these needs are not met, and the lack of adequate training and resources found within early childhood classrooms, the need for intervention is clear. Based on this need for intervention, researchers (e.g., Filcheck, McNeilGreco, & Bernard, 2004; Lyon et al., 2009; McIntosh, 2010; McIntosh, Rizza, & Bliss, 2000; Tiano & McNeil, 2006) have begun to adapt an empirically-supported

treatment known as Parent-Child Interaction Therapy (PCIT) for use with teachers within early childhood settings. The theoretical and empirical basis for PCIT provides the foundation for the appropriate and effective application of the adaptation of this treatment model for use with teachers. This adaptation, known as Teacher-Child Interaction Therapy (TCIT), helps to address children's behavioral needs through increasing positive teacher-child interactions while educating teachers on effective discipline techniques. As such, through a thorough exploration of the foundation of PCIT, both theoretically and empirically, the basis for TCIT can be established.

### **Parent-Child Interaction Therapy**

Parent-Child Interaction Therapy (PCIT) is an evidence-based treatment for preschool-aged children displaying disruptive and externalizing behaviors and their parents (Funderburk & Eyberg, 2010). First developed in the 1970s by Sheila Eyberg, the treatment model was originally intended for use with children in early childhood exhibiting significant behavior problems. Eyberg theorized that a child's externalizing behaviors were a result of less than ideal parent-child interactions such as abusive and coercive parent-child relationships.

PCIT is a parent-training program that has a dual focus on enhancing parent-child relationships as well as beneficially impacting children's behavior by increasing positive, prosocial behaviors while decreasing disruptive, noncompliant behaviors (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010). The goal of PCIT is to promote a warm, nurturing parent-child relationship that enables parents to establish effective discipline, which encompasses limit setting and consistency. As a result, an enduring change is created in both parent and child behavior.

Since the development of PCIT, evidence for the treatment model has expanded upon this original intent. Several empirical studies have since demonstrated positive outcomes with a variety of clinical (e.g., Bagner & Eyberg, 2007; Chaffin et al., 2004; Choate, Piccus, Eyberg, & Barlow, 2005; Timmer et al., 2006) and cultural (e.g., Matos, Baurermeister, & Bernal, 2009; McCabe & Yeh, 2009) populations.

### **Theoretical Foundations of Parent-Child Interaction Therapy**

The theoretical foundation of PCIT draws from the integration of several developmental and parent-child interaction theories. At the center of PCIT's treatment model is Diana Baumrind's (1966) theory of parenting; in particular, the authoritative parenting style (Eyberg & Bussing, 2010; Funderbunk & Eyberg, 2010; Zisser & Eyberg, 2010). The authoritative parenting style balances nurturance and warmth with firm limit-setting (Baumrind, 1966) which aligns with the treatment goals of PCIT. In order for parents to learn and adopt this style, PCIT draws from attachment theory as well as social learning theory and operant conditioning (McNeil & Hembree-Kigin, 2010). Baumrind's theory provides the framework to integrate the aforementioned theories to result in optimal child outcomes (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010).

#### **Baumrind's Theory Developmental Parenting**

Diane Baumrind's theory of developmental parenting (1966) emphasizes the desired balance between warmth and discipline in parenting. Her theory outlines three types of parenting style: permissive, authoritarian, and authoritative. Each of the three styles consists of varying interplays between parents' tendency to be responsive and demanding. These two dimensions of parenting emerged as a result of factor analytic studies investigating parenting (Baumrind, 1995). Responsiveness encompasses a variety

of parental characteristics and behaviors including warmth, reciprocity, and attachment. Demanding parenting, on the other hand, includes coerciveness, confrontation, monitoring, discipline, and corporal punishment.

The permissive parent, as described by Baumrind (1966, 1968), attempts to be nonpunitive, accepting, and affirming towards his/her child. This style of parent provides the child with explanations regarding rules and makes few demands on the child in terms of household chores or responsibilities. Furthermore, the permissive parent allows the child to exercise control and regulate his/her own activities. This type of parent views him/herself as a resource for the child, as opposed to a model of appropriate behavior. The permissive parent relies on reason and manipulation, not overt power, as a means for control.

The authoritarian parent, on the other hand, values obedience and punitive means of control. This parenting style is characterized by expectations of child compliance, restricted autonomy, and increased responsibilities within the household in order to foster the child's work ethic. Authoritarian parents hold children to a set of standards that is usually dictated by a higher authority and considered absolute. There is no expectation of discussion between child and parent nor explanation of rules. Instead, children are expected to simply accept the parents' word (Baumrind, 1966, 1968). This style of parenting most closely aligns with the coercive parenting style outlined by coercion theory (Patterson, 1982; Scaramella & Leve, 2004).

The third parental type, the authoritative parent, values both the child's autonomy and conformity. Unlike the previously described types, this style of parenting achieves a balance of responsiveness and demand. The authoritative parent recognizes the child's



individuality and freedom while still exerting structure and boundaries. This is achieved through a balance of warmth and control. Authoritative parents affirm the child's qualities and engage in discussion with the child regarding rules and expectations. However, the parent also sets standards for conduct and exercises control when needed, but never unjustifiable control. The authoritative parent uses a balance of reason, shaping by reinforcement, and power (Baumrind, 1966, 1968).

Following her presentation of the parental prototypes, Baumrind (1966) conducted a literature review to determine child outcomes related to the aspects of each parenting style. Her findings revealed that punitive, hostile discipline practices (defined by threats, hostile remarks and the use of severe punishment, ridicule, and strong disapproval) are associated with negative cognitive and emotional outcomes in children. In fact, Baumrind (1966) concludes that “[p]unishment which [*sic*] is severe, unjust, ill-timed, and administered by an unloving parent is probably harmful as well as ineffective” (p. 896).

Just as Baumrind's theory (1966) argues the need for parenting that balances both responsiveness and demandingness, the therapeutic goals of PCIT are designed to achieve the same end (Eyberg & Bussing, 2010). Each phase of PCIT aligns with one side of the balanced equation. Child Directed Interaction addresses parental warmth and responsiveness through fostering positive, warm parent-child interactions. During Parent Directed Interaction, however, parents learn to apply appropriate disciplinary techniques and limit-setting to achieve child compliance with parents' demands.

### **Attachment Theory**

As previously indicated, attachment theory is one of the essential foundational components of PCIT. Attachment, according to Bowlby (1978), refers to the tendency of humans to make strong, warm bonds with others. Attachment in this sense is considered to have a biological basis that is universal to all humans (Ainsworth, 1989). Although most evident during infancy and early childhood, attachment behaviors continue into adulthood (Bowlby, 1978).

During infancy and early childhood, children engage in attachment behaviors, i.e. those behaviors that result in attaining and maintaining proximity to a preferred individual, usually the primary caregiver (Bowlby, 1978). Children and caregivers engage in patterns of such behaviors routinely (Bowlby, 1969). For example, when distant from a caregiver, infants engage in a variety of behaviors to increase engagement, such as reaching, babbling, smiling and crying. The primary caregiver then responds to the child's attachment behaviors. This exchange results in a dynamic interaction between caregiver and child, with repeated patterns of behavior and reactions (Bowlby, 1969). Over time, children begin to learn the relationships between their own behavior and caregiver response. Depending on the consistency and quality of the caregiver's response, children adjust their own behaviors. As a result of this exchange, caregiver-child attachment relationships can vary in quality and style.

Variations in caregiver response, as described previously, have significant consequences for the child. When the caregiver is available and willing to react in a warm, responsive manner, attachment behavior begins to decrease while child exploration increases (Bowlby, 1978). In child-caregiver relationships of consistent, responsive interactions, the child learns to identify the caregiver as a "secure base" (p.

9). In other words, the child can explore his/her environment and then return to the safety of the caregiver, especially when afraid or tired. However, when caregiver-child interactions are characterized by inconsistency or lack of responding, the child does not regard the caregiver as a secure base from which to safely explore.

According to Bowlby (1969; 1978), the impact of this interaction between caregiver and child is long-lasting. Throughout the first three years of life, children are progressively building their own “internal world” (Bowlby, 1969, p. 354). This internal structure provides children with ways to understand the structure of interactions with the environment. In turn, children also internalize “working models” of how the world around them is expected to behave (p. 354).

These working models provide children with a framework to plan and organize their interactions within the environment. In other words, the child constructs an internal structure for “how the physical world may be expected to behave, how his mother and other significant persons may be expected to behave, and how each interacts with all the others” (Bowlby, 1969, p. 354). The child continues to use this framework of patterns of behaviors throughout his/her lifetime (Bowlby, 1978).

As Bowlby was exploring and developing the theoretical underpinnings of attachment, Ainsworth and colleagues (1971) were investigating the behavior patterns of parent-child attachment through the “strange situation” procedure (p. 1). This experimental method was developed to help explore individual differences in children’s behavior in relation to parent-child attachment. The situation allowed for examination of the use of a caregiver as a secure base, the reaction of a child to a stranger, and the

reaction of the child to separation from the caregiver. The strange situation involves eight conditions implemented in a standard order.

As a result of empirical research employing the use of the strange situation (e.g., Ainsworth, Bell, & Stayton, 1971; Ainsworth, Blehar, Waters, & Wall, 1978) three classifications of attachment behavior among children were identified - securely attached children, avoidant children, and ambivalent children. Securely attached children explored their environment but used their mothers as a secure base. Upon separation from their mothers, these children increased attachment behaviors and ceased exploration. When reunited, the children in this group sought interaction with their mothers. Avoidant children, on the other hand, rarely showed emotional distress when separated from their mothers. Upon reunion, these children avoided interaction with their caregivers. The third group of children, classified as ambivalent, exhibited extreme signs of distress upon separation. However, when reunited with their mothers, children within this group were ambivalent towards the caregivers, simultaneously seeking proximity yet resisting interaction and contact.

### **Outcomes of Attachment**

In the decades since Bowlby and Ainsworth first began exploring the patterns and theoretical basis for attachment theory, a variety of empirical evidence has been conducted that demonstrates the importance of secure attachments between caregivers and children. Secure attachments have been associated with better academic skills (Aviezer, Resnick, Sagi, & Gini, 2002), cognitive engagement, communication skills (Moss & St-Laurent, 2001), as well as concept development in preschoolers (Pianta, Nimetz, & Bennett, 2002). In fact, secure mother-child attachment is also associated

with superior problem solving skills in early childhood (Frankel & Bates, 1990). In addition to these skills associated with school readiness and academic success, empirical findings also link attachment to social outcomes. Children who are securely attached are rated as having better social skills than their peers with insecure attachments (Erickson, Sroufe, & Egeland, 1985; Hodges, Finnegan, & Perry, 1999), are more popular with peers in preschool (DeMulder, Denham, Schmidt, & Mitchell, 2000), and are better socially adjusted during the transition to kindergarten (Pinata et al., 2002). Additionally, Aviezer and colleagues (2002) found that children with secure maternal attachments exhibit more emotional maturity.

Conversely, when considering the theoretical basis of PCIT, insecure infant-caregiver attachments have been associated with behavior problems in preschool (Erickson et al., 1985) as well as anger and aggression in preschool (DeMulder et al., 2000). In fact, Lyons-Ruth and colleagues (1993) found disorganized or disoriented attachment status to be the strongest predictor of hostile behavior towards peers in preschool classrooms.

### **Teacher-Child Attachment**

As indicated by Bowlby (1969, 1978) although it is common for a child's attachment figure to be a parent, children can form attachment bonds with any consistent caregiver. As a result, researchers have also explored the impact of teacher-child relationships. In fact, Howes and Ritchie (1999) found that a preschooler's attachment to early childhood teachers parallels attachment behavior between parents and children. However, as suggested by Bergin and Bergin (2009) it is important to note that not all teacher-child relationships constitute attachment. As a result, research in this area has

considered the impact of child-teacher relationships, regardless of whether the relationships qualify as attachment.

Although DeMulder and colleagues (2000) found that securely attached boys were more securely attached with their preschool teachers, it is possible for children with insecure parental attachments to bond with teachers (Bergin & Bergin, 2009). High quality teacher-child relationships have been found to be associated with a variety of positive outcomes. For instance, O’Conner and McCartney (2007) found that quality teacher-child relationships from preschool through third grade were positively associated with higher scores on standardized measures of academic achievement in third grade. Similarly, closer teacher-child relationships reported in the fall of Kindergarten were found to be associated with gains in classroom participation and fondness for school in spring of Kindergarten and first grade (Ladd & Burgess, 2001).

Research has also suggested that quality relationships between teachers and children can mediate the effects of less than ideal parent-child attachments. Close teacher-child relationships at the onset of Kindergarten were predictive of increased obedience during classroom activities and liking of school in first grade, regardless of children’s at-risk status (Ladd & Burgess, 2001). Likewise, positive teacher-child relationships were found to mediate the impact of insecure child-mother attachment on achievement. In fact, the quality of teacher-child relationship was more predictive of third grade achievement scores than insecure maternal attachment (O’Conner & McCartney, 2007).

Notably, Howes and colleagues (1998) found that children’s ratings of their relationships with teachers at age nine were predicted by the quality of relationships with

their first (preschool) teachers. Conversely, research conducted by Ladd and Burgess (2001) suggests that teacher-child relationships characterized by conflict were associated with a variety of negative outcomes. Conflict ridden teacher-child relationships in Kindergarten were found to be predictive of lower levels of cooperation and school liking in first grade. Similarly, teacher-child conflict also predicted children's classroom misconduct and attention difficulties.

A review of the previously mentioned literature suggest the importance of not only enhancing relationships between children and caregivers, but also between children and teachers. Early childhood education centers provide an environment supportive of warm, responsive relationships due to the structure of the curriculum and daily routines. When considering the impact of teacher-child relationships, especially during the preschool years, adapting PCIT for use with teachers is empirically and theoretically supported.

### **Social Learning Theory/Coercion Theory**

Social learning theory, as described by Bandura (1977), theorizes human behavior and learning in terms of the interplay between direct and vicarious experiences within the context of biological factors. In other words, behavior, individual factors, and environmental factors “all operate as interlocking determinants of each other” (p. 10). Social learning theory purports that human functioning is not the result of strictly internal or external forces; rather it is a continuous interplay and interaction between the two.

Furthermore, learning not only occurs with direct experience, but vicariously. In other words, individuals learn from observations of others in their daily lives. Other individuals, printed materials, and even media provide models from which individuals

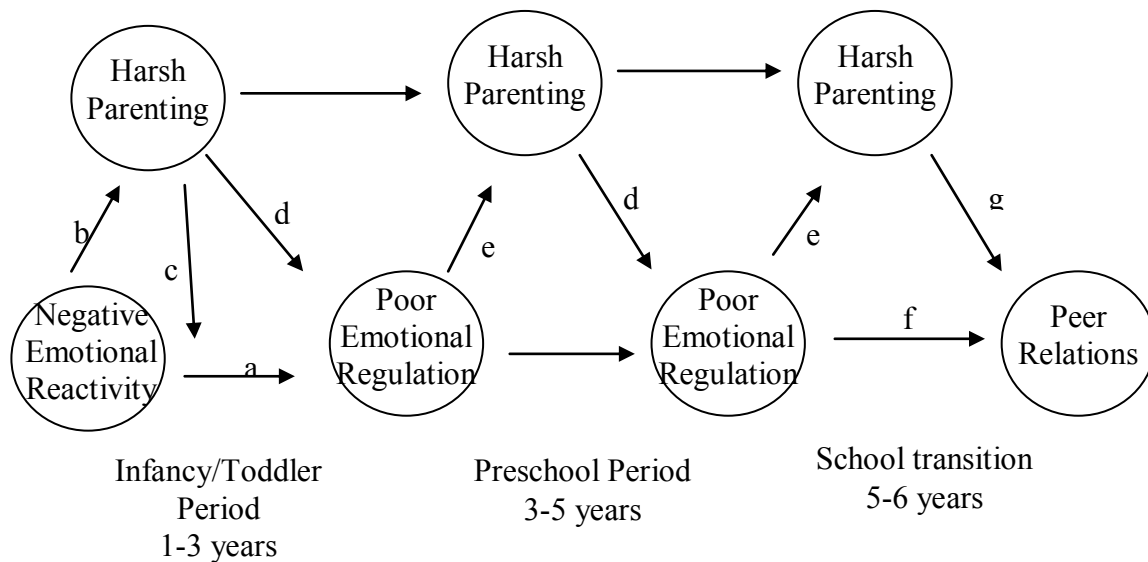
learn and behave in new ways. As an individual observes these models (such as parents, figures in popular culture, or strangers), he or she internalizes these ideas of behavior that later guide one's own actions (Bandura, 1977). Following these basic tenants of social learning theory, coercion theory applies this understanding of human behavior and learning to parent-child interactions (Granic & Patterson, 2006).

Scientists from the Oregon Social Learning Center (OSLC) first developed coercion theory, following principles of social learning theory (Granic & Patterson, 2006). Coercion theory refers to a “model of behavioral contingencies that explain how parents and children mutually ‘train’ each other to behave in ways” that increase children's problem behaviors while decreasing parents' ability to manage such behaviors (Granic & Patterson, 2006, p. 101).

After observing hundreds of parent-child interactions, researchers began to notice patterns in these exchanges. Generally, coercion theory hypothesizes that children are at greater risk for problem behaviors when their interactions with parents tend to be negative and intensely emotional (Scaramella & Leve, 2004). As a result of these interactions, parents inadvertently reinforce their children's undesirable behaviors while the child's challenging behavior continues to reinforce parental negativity.

Harsh parenting is defined as parenting that is “emotionally negative (i.e., angry and hostile) and behaviorally inconsistent (i.e., over- and under-involvement)” (p. 98). Additionally, this style of parenting does not foster warmth in parent-child interactions. In fact, this style of parenting not only occurs in the absence of affection and tenderness, but characterizes the majority of parental response to child behavior. The cycle presented by Scaramella and Leve (2004) is demonstrated pictorially in Figure 1.





*Figure 1.* The impact of harsh parenting during early childhood. Adapted from “Clarifying Parent-Child Reciprocities During Early Childhood: The Early Childhood Coercion Model” by L. V. Scaramella and L. D. Leve, 2004, *Clinical Child and Family Psychological Review*, 7, p. 97.

Underlying this negative cycle in coercion theory is the expectation that during early childhood, one of the main developmental tasks for children is mastering emotional regulation (Scarmella & Leve, 2004). As illustrated by *path a* in Figure 1, negative emotional arousal paired with harsh parenting, which includes negative reactions, may result in poor emotional regulation. This is the result of two factors. First, when children experience intense negative emotions, emotional regulation is more difficult to attain. Likewise, children’s negative emotionality may induce further harsh parenting (*path b*) or parenting strategies that interfere with children’s development of emotional regulation. This parental impact can occur directly (*path c*) or indirectly (*path d*).

Furthermore, due to undeveloped emotional regulation skills, children are likely to respond to parental requests and demands with negative emotionality (*path e*). This reaction likely further evokes harsh parenting, which continues to inhibit emotional regulation in children (*path d*). As demonstrated by Figure 1, such interactions between children and parents actually continue to maintain and intensify these behaviors. Over time, this style of interaction will also impact children's behavior outside of the home environment (*paths g and f*).

After an extensive literature review of family processes of antisocial and aggressive children, Patterson (1982) found that the parents of these children generally were unskilled in their use of effective punishment. Likewise, many of the parents of deviant children were unable to provide models of appropriate social behavior. As a result, as the aforementioned cycle continues, the family members become increasingly avoidant of one another and no longer engage in any positive, shared interactions.

Coercion theory suggests that these negative interaction cycles are reactive – each member (parent and child) impacting the behavior of the other. In other words, the parent's behavior (i.e., harsh parenting) impacts the child's behavior and vice versa. Patterson (1982) argues that these coercive family processes can be alleviated. In order to achieve this goal, the parent must be the source of change. In other words, parents can be taught to improve their skills in managing their children's problem behaviors. PCIT provides a treatment structure for accomplishing this goal.

The structure and framework of PCIT works to break the cycle of negativity described through coercion theory through two means. First, during the Child-Directed Interaction phase of PCIT, the goal is to foster warm, nurturing parent-child interactions

(Eyberg & Bussing, 2010). This style of parenting is at odds with the lack of affection and responsiveness that characterizes the harsh parenting described in coercion theory (Scaramella & Leve, 2004).

Likewise, during the Parent-Directed Interaction phase, parents master effective and consistent discipline techniques. Again, the harsh parenting style described in coercion theory consists of fluctuation between over-involvement and under-involvement in parenting. In other words, parents respond to child behaviors at two extremes. Parents' discipline either is characterized by anger and intense authority or by ignoring the behavior (Scaramella & Leve, 2004). Likewise, parents of children displaying aggressive and disruptive behaviors are often unskilled in effective disciplinary techniques (Patterson, 1982).

During PCIT, the focus on consistent and effective discipline techniques will alleviate these inappropriate responses to children's challenging behaviors. As recommended by Patterson (1982), the therapist works as a facilitator to teach and model appropriate and effective parenting strategies (Eyberg & Bussing, 2010). Furthermore, parents are provided with the opportunity to practice these skills until mastery has been achieved.

### **Outcomes of Parenting Styles**

Both coercion theory (Patterson, 1982) and Baumrind's (1966) discussion of parenting styles attest to the impact and outcomes of parents' discipline styles. Since Baumrind's (1966) first discussion of the influence of parental prototypes, literature continues to support her initial findings. As proposed by both Baumrind and coercion theory, the literature suggests parent-child interactions characterized by harsh parenting is

not only ineffective, but also is associated with negative child outcomes. Conversely, parenting which achieves both warmth and consistent, effective parenting is associated with more positive outcomes.

Psychological control, which is characterized by parents encroaching upon or obstructing the child's individuation from the family, has been associated with adverse child outcomes (Barber, Olsen, & Shagle, 1994). Psychological control has been found to be associated with child externalizing problems (Barber et al., 1994). Similarly, perceived parental psychological control also was associated with negative child outcomes, including depressive symptoms and antisocial behavior in both domestic and international populations (Barber, Stolz, & Olsen, 2005). Likewise, high levels of maternal psychological control were found to be highly predictive of both childhood externalizing and internalizing behaviors during the transition from kindergarten to primary school (Aunola & Nurmi, 2005).

Just as psychological control is associated with negative child outcomes; lack of behavioral control also has been found to be associated with detrimental effects. Lack of rules, regulations, and discipline was found to be highly associated with and predictive of adolescent antisocial behavior (Barber et al., 2005). Furthermore, lack of parental control has also been found to be associated with child externalizing problems (Barber et al., 1994). Likewise, permissive parenting, as described by Baumrind's (1966), is associated with lower child competence and less autonomy (Baumrind, Larzelere, & Owens, 2010).

Harsh parenting styles, as described by both coercion theory (Scarmella & Leve, 2004) and Baumrind's (1966) authoritarian parenting prototype have also been associated with adverse child outcomes. This style of parenting has been associated with lower

levels of general competence and increased problems in adolescence. Additionally, parental verbal hostility and arbitrary discipline were found to be highly associated with adverse outcomes in adolescence (Baumrind et al., 2010). Notably, this style of punishment, which is unfair and delivered by a parent lacking warmth is not only harmful, but ineffective (Baumrind, 1966).

Conversely, parenting that is characterized by both high levels of warmth and demands have been found to be associated with high levels of general competence and lower levels of overall problems in adolescence (Baumrind et al., 2010). Parental responsiveness in general is associated with better regulation of negative emotions in children. Maternal response to distress in particular was also predictive of children's development of empathy, prosocial behaviors, while maternal warmth was associated with better regulation of positive affect (Davidov & Grusec, 2006).

Overall, parenting styles that are warm and responsive, yet consistent in terms of effective disciplinary practices are more advantageous. PCIT, based on the theoretical foundations of both Baumrind's theory (1966) and coercion theory (1982), is structured to help parents not only learn, but master this balance in parenting.

### **Operant Behavior**

In addition to attachment theory and coercion theory, PCIT is also built on several principles guiding operant behavior theory. In terms of operant conditioning, behavior is understood in terms of stimulus, response, and reinforcement (Skinner, 1963). In other words, behavior is more than simply the relationship between stimulus and response. Thorndike (1933) theorized the importance of outside reinforcement through the law of effect.

Human beings, as well as numerous species' of animals, respond in a variety of different ways to the same situation. However, over time, individuals tend to favor one response and react in this manner the majority of the time. According to Thorndike (1933), this strengthening of a particular response is not due to “[r]epetition or frequency of occurrence, recency, intensity, finality or consummatoriness, tendency to attain equilibrium, and other features of the process have been alleged to be adequate to explain the strengthening of connection” (p. 173). Instead, this strengthening of connection can be attributed to what Thorndike (1933) refers to as “after-effects” (p. 173).

The law of effect theorizes that positive after-effects, in other words, reinforcement, result in an increase of the response associated with them. Conversely, when reactions are followed by negative or unpleasant consequences, these behaviors decrease in the future (Schwartz, Wasserman, & Robbins, 2001). As stated by Skinner (1958), these principles are applicable in social situations. When considering social behaviors, one must consider “*who* is reinforcing *whom* with *what* and to *what* effect” (p. 97).

When considering the interaction between stimulus, response, and reinforcement, it is imperative to note that reinforcement refers to the strengthening of a response (Skinner, 1963). In this sense, reinforcement is relative to the individual and the situation (Schwartz et al., 2001). Throughout PCIT, these basic tenants of the law of effect as well as operant learning are used not only in parent-child interactions, but also during interactions between parents and the therapist.

Parents are taught to reinforce children's appropriate and prosocial behaviors through various reinforcement techniques, such as labeled praise and reflections. In other

words, by using these reinforcement strategies, children's positive behaviors are likely to increase. Likewise, parents are taught strategies such as selective ignoring and time-out, which are likely to be aversive responses for children. As a result, when implemented, these strategies help deter certain behaviors in the future (Eyberg & Bussing, 2010).

### **Theoretical Integration**

In order to optimize the interactions between parents and children, PCIT relies on the integration and collaboration of the aforementioned theories. Baumrind's theory offers the overarching framework to incorporate attachment theory, coercion theory, and operant behaviorism (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010). As demonstrated through Baumrind's (1966) theory and the empirical evidence examining the impact of parenting styles, positive child outcomes result from parenting which achieves an ideal balance between responsive and demanding tendencies.

Attachment theory provides PCIT with the underpinnings for supporting warm, positive interactions between parents and children, which provides one side of Baumrind's balanced equation. In order to achieve an optimal level of parental demand, social learning theory and operant conditioning inform firm limit setting and behavioral contingencies which foster effective discipline. Overall, the presented combination of theories allows for parents to obtain the desired balance offered by Baumrind, resulting in positive child outcomes and parent-child interactions.

### **Structure of PCIT**

With an established understanding of the theoretical foundations for PCIT, it is equally important to describe the structure and implementation of the treatment model. Assessments are essential to treatment planning and evaluation within PCIT. Throughout

the treatment, the therapist uses data to drive the process and content. Prior to the initialization of treatment, the therapist relies on multiple informants, sources, and methods to operationally define and understand the child's behavior problems (Eyberg & Bussing, 2010).

During the initial assessment, as well as throughout the treatment, rating scales are completed to evaluate the intensity and frequency of the child's problem behaviors. In order for the therapist and parent to assess the frequency of the child's disruptive and problem behaviors compared to normative samples, assessment tools can be used (Eyberg & Bussing, 2010). Eyberg and Bussing (2010) recommend the use of the *Eyberg Child Behavior Inventory Intensity Scale* (Eyberg & Pincus, 1999). If appropriate, the *Sutter-Eyberg Student Behavior Inventory – Revised* can also be completed by the child's teacher.

In addition to standardized behavior assessments, direct observation is utilized within PCIT. Similarly to the aforementioned assessments, observations are conducted prior to treatment as well as throughout the progression of treatment. The *Dyadic Parent-Child Interaction Coding System* (Eyberg & Pincus, 1999) can be utilized to code interactions between children and parents. Prior to intervention, data collected can serve as a baseline for treatment monitoring and evaluation. Additionally, throughout treatment phases, the therapist uses the first five minutes of each session to conduct direct observations. Data from these observations provide the therapist with information for treatment plans based on which skills parents have mastered versus those that require more building (Eyberg & Bussing, 2010).



Each phase of the program (CDI and PDI) follows an established structure. First, each phase begins with a teaching session during which the therapist presents and explains the targeted skills through modeling and role-playing (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010). Next, therapists use coaching sessions to continue building the skills through in-vivo training. During PCIT, therapists generally coach using a “bug-in-the-ear” technique, providing parents with immediate feedback and instruction while observing the parent-child interactions through a two-way mirror (Eyberg & Bussing, 2010, p. 143).

Treatment phases of PCIT continue until mastery criteria are met. A criterion for mastery varies for each phase of treatment and is based on the parent reaching threshold criteria during a 5-minute observation conducted at the start of each session (Eyberg & Bussing, 2010). The therapist uses data and the master criterion to guide the number and content of sessions. The therapist continues to coach parents on the skills which have not been mastered, as determined through pre-session observations (Eyberg & Bussing, 2010). In a review of thirteen studies of PCIT, Thomas and Zimmer-Gembeck (2007) found the average length of treatment to be between twelve and fourteen weeks.

### **Phases of PCIT**

In order to meet the goal of positive parent-child interaction with effective behavior management, PCIT includes two phases of treatment, child-directed interaction (CDI) and parent-directed interaction (PDI; Eyberg & Bussing, 2010; Funderbunk & Eyberg, 2010; Zisser & Eyberg, 2010). Baumrind’s authoritative parenting style, which achieves the desired balance of warmth and authority, is taught throughout PCIT using

underpinnings from attachment theory and social learning theory (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010). First, in the CDI phase, the treatment focus is on establishing a warm and nurturing parent-child relationship, using principles of attachment theory. Next, during the PDI phase, parents are taught behavior management techniques based in social learning theory to achieve more effective discipline (Eyberg & Bussing, 2010).

### **Child-Directed Interaction Phase**

The first phase of treatment during PCIT is the child-directed interaction (CDI) phase. As previously indicated, the goal of this phase is to establish a secure and nurturing parent-child relationship through increased parental responsiveness and warmth (Eyberg & Bussing, 2010). During CDI training, therapists teach and model skills for positive parent-child interactions which align with attachment theory and aspects of Baumrind's authoritative parenting style.

Throughout this phase of treatment, the focus is on child-led interactions (Eyberg & Bussing, 2010). In other words, parents are taught to let their children direct play activities. Therapists are instructed to explain to parents that children tend to act more positively when they are leading activities. These interactions allow parents to give children attention for positive, prosocial behaviors (McNeil & Hembree-Kigin, 2010). This is achieved by the therapist helping the parent master specific communication strategies while limiting others. These skills are conceptualized as “do” versus “don’t” skills (Eyberg & Bussing, 2010, p. 144) or as “do” versus “avoid” skills (McNeil & Hembree-Kigin, 2010, p. 59).

During the teaching session of CDI, parents are explicitly taught the skills involved during this phase (Eyberg & Bussing, 2010). The therapist uses handouts including the information taught during the session. This allows parents to focus on the skills without needing to take notes or memorize. Furthermore, as skills are presented, the therapist describes the skill, provides examples and rationale, and models the appropriate behavior. Teaching sessions are intended to be interactive between the therapist and parent. The therapist encourages the parents to discuss potential problems and foreseen obstacles to using the skills. Role playing can be used during this session if necessary (McNeil & Hembree-Kigin, 2010).

Also, parents are given homework to continue practicing the CDI skills at home. Parents are instructed to practice the skills during a five-minute “special time” with their child each day (McNeil & Hembree-Kigin, 2010). The therapist provides the parent with the rationale behind this playtime as well as specific recommendations. For instance, this five-minute session should not be treated as a privilege, which the child could lose as punishment for inappropriate behavior. Additionally, parents are encouraged to limit the play session to as close to five minutes as possible. This results in consistency so the child has reasonable expectations and does not feel cheated on some days.

Following the teaching session, coaching sessions are used to help parents master the skills taught throughout CDI. Therapists use labeled praise with parents to increase the use of CDI skills (McNeil & Hembree-Kigin, 2010). During the sessions, therapists also may provide suggestions and directions as rapport is established and maintained (Eyberg & Bussing, 2010).

**Do Skills.** The “do” communication skills parents are taught to use throughout the CDI phase include behavioral descriptions, reflections, and labeled praise (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010). By using these techniques, parents are able to provide quality attention to their child’s positive behaviors (Eyberg & Bussing, 2010; McNeil & Hembree-Kigin, 2010). Parents are taught the acronym, PRIDE, to use as a mnemonic device to remember positive communication skills. PRIDE stands for the first letter of each skill: Praise, Reflect, Imitate, Describe, and Enthusiasm. In addition to these communication skills, parents are also encouraged to use two behavior strategies as additional “do” skills – strategic attention and selective ignoring. A summary of the PRIDE skills is presented in Table 1.

Table 1

*PRIDE Skills*

<b>Do Skills</b>	<b>Definition</b>	<b>Rationales</b>	<b>Examples</b>
<b>Praise – Labeled</b>	Saying specifically what you like about your child's play, accomplishments, words, appearance, or personality.	Adds warmth to the relationship Causes the behavior to increase Increases self-esteem Lets child know what you like Makes both parent and child feel good!	Parent: You are doing a great job of coloring in the lines. Parent: Terrific counting! Parent: I like the way you are playing so quietly.
<b>Reflect</b>	Repeating or paraphrasing what your child says	Allows the child to lead the conversation Shows the child that the parent is interested Demonstrates acceptance and understanding Improves the child's speech Increases verbal communication	Child: The horse is going to be friends with the cow. Parent: The horse is going to be friends with the cow. Child: The camel got bumps on top. Parent: It has two humps on its back.
<b>Imitate</b>	Doing exactly what your child does, or joining your child in play	Permits the child to lead the play Teaches the child to play with others Shows interest and approval for your child's choice of play	Child: I'm making a circle. Parent: I'm going to draw a circle too – just like yours.
<b>Describe the Child's Behavior</b>	Talking about what your child is doing.	Allows child to lead Teaches concepts Models speech Hold's the child's attention Organizes the child's thoughts and activities	Parent: You are driving the car into the garage. Parent: You drew a smiling face.

Be Enthusiastic	Showing excitement, enthusiasm, playfulness and interest	Keeps the child interested Helps distract the child when ignoring	Voice has lots of inflection. Words sound playful. Speech sounds animated and excited.
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*Note:* Adapted from “Parent-Child Interaction Therapy (2<sup>nd</sup> ed.)” by C. B. McNeil and T. L. Hembree-Kigin, 2010, New York, NY: Springer, p. 443.

***Praise.*** During the CDI phase, parents are encouraged to provide frequent praise to their children. In fact, the mastery criterion in this domain is providing one instance of labeled praise every 30 seconds (McNeil & Hembree-Kigin, 2010). Praise can be conceptualized into two categories – labeled and unlabeled. Unlabeled praise is general praise that does not specifically indicate what behavior solicits approval, such as “good job” or “great work.” Labeled praise, which is the emphasis during the CDI phase, allows the child to understand exactly what behavior the parent endorses. For instance, “I like how you are building so quietly” (Eyberg & Bussing, 2010, p. 144). Although both labeled and unlabeled praise increase the warmth and positive interactions between parents and children, labeled praise is emphasized during CDI (McNeil & Hembree-Kigin, 2010).

***Reflect.*** In addition to praise, parents are encouraged to use reflections during interactions with their children. Reflections refer to verbally imitating the message of the child. Through reflections, parents are able to elaborate, extend, or delicately correct the child’s communication (McNeil & Hembree-Kigin, 2010). When the skill is first introduced, parents will frequently start with simply repeating what the child says. With time and practice, however, parents begin to become more fluid in applying elaborations to reflections. For instance, if the child says, “I builded a house” an appropriate

reflection would be “You built a house” (reflection with grammatical correction) or “You built a house with a front door” (reflection with grammatical correction and elaboration; McNeil & Hembree-Kigin, 2010, p. 62).

***Imitate.*** Third, parents are instructed on imitation during the CDI phase. Imitation refers to the parent mirroring the child by playing with similar toys in a comparable manner to the child. Instead of replicating exactly the actions of the child, parents are instructed to approximate the child’s play while still allowing the child to lead the activity. For instance, if the child is stacking blocks, the parent should also stack blocks, but make a shorter, less sturdy tower (McNeil & Hembree-Kigin, 2010).

***Describe.*** While interacting with their children during the CDI phase, parents also are instructed to give behavioral descriptions. When using descriptions, parents refer to the current behavior of the child. Behavioral descriptions must describe the child’s actions, as opposed to describing the parent’s actions or providing information about the situation. As a result, behavioral descriptions should always include the word “you” (McNeil & Hembree-Kigin, 2010, p. 64). Examples of behavior descriptions include, “You are building a fort” or “Now you’re searching for the letters for the next word” (Eyberg & Bussing, 2010, p. 144). Conversely, statements such as, “The doll is sleeping” and “You played with the blocks last time we were here” do not meet the criteria of an appropriate description of behavior (McNeil & Hembree-Kigin, 2010, p. 64). Neither statement describes the child’s current behavior.

***Enthusiasm.*** Finally, the last of the PRIDE skills introduced to parents is enthusiasm. Since the CDI phase focuses on a positive parent-child relationship, enthusiasm allows parents to express interest and warmth. The therapist can model

appropriate levels of enthusiasm by demonstrating various skills with and without enthusiasm and inflection. Through being enthusiastic, CDI can be more engaging for both parents and children (McNeil & Hembree-Kigin, 2010).

***Strategic attention.*** Prior to treatment, families may be stuck in a routine of negative behavior begetting negative attention. A child's frequent misbehaviors can result in frequent negative attention from parents. As a result, when the child behaves inappropriately, parents may withdraw attention, viewing the appropriate behavior as an opportunity for a break. Through the use of strategic attention, parents are able to break this cycle and instead, give attention for positive behaviors (McNeil & Hembree-Kigin, 2010).

Strategic attention involves two steps. First, parents must identify those behaviors and characteristics which they consider desirable and positive. Once identified, parents and the therapist work to identify these behaviors during parent-child interactions. In other words, parents are encouraged to "catch the child being good" (McNeil & Hembree-Kigin, 2010, p. 67). Once the child exhibits the behavior, the therapist coaches the parent to use the PRIDE communication skills to give positive attention to the behavior.

***Selective ignoring.*** In conjunction with selective attention, parents are also instructed to use selective ignoring to further shape children's behavior. First, parents are asked to identify their child's behaviors which they would like to see diminish (McNeil & Hembree-Kigin, 2010). Next, the therapist indicates that parents are to ignore inappropriate behavior by looking away from the child without gesturing and talking to him/her. If the child engages in behaviors that cannot be ignored (such as aggression)



during parent-child interactions during the CDI phase, the parent is instructed to end the session of special time immediately (Eyberg & Bussing, 2010).

In order to use selective ignoring effectively, the therapist shares several underlying assumptions and aspects necessary for successful use. First, ignoring only has an impact on attention-seeking behaviors. For instance, if the child is eating candy before dinner or jumping on the bed, it is not helpful to ignore these behaviors. Additionally, the therapist cautions the parent that ignoring causes behavior to get worse prior to improvement. Furthermore, parents are instructed to continue ignoring until a positive behavior is exhibited. Finally, once positive behavior is displayed, parents are instructed to praise the child enthusiastically (McNeil & Hembree-Kigin, 2010).

**Avoid skills.** During CDI, while being taught skills to use frequently throughout parent-child interactions, parents are also taught skills that should be avoided. These communication skills include commands, questions, as well as criticism and sarcasm (Eyberg & Bussing, 2010; McNeil & Hembree-Kigin). Because the focus of CDI is on promoting positive and warm interactions, communication skills that can be intrusive during parent-child play interactions are avoided (Eyberg & Bussing, 2010).

Commands are inappropriate during the CDI phase because interaction should be child-driven. When parents give commands, whether direct or indirect, children no longer have the ability to direct and lead play (McNeil & Hembree-Kigin, 2010). Furthermore, giving commands increases the risk of negative interactions between parents and children (Eyberg & Bussing, 2010). Although how to give effective commands and respond to inappropriate behavior is addressed during PDI, this is not the focus in the CDI phase.

Likewise, parents are instructed to avoid questions during the CDI phase. This includes questions beginning with an interrogative (such as who, what, why) but also statements ending with raised inflection, implying a question. Additionally problematic are “question tags” (McNeil & Hembree-Kigin, 2010, p. 56). Question tags refer to short statements added to the end of a sentence, such as “right?” or “okay?” (p. 56). Questions are avoided because they tend to direct the interaction instead of letting the child lead. Additionally, questions can be interpreted as the parent’s disapproval of what the child is doing (e.g., “Are you sure you want to put that block on top?”; McNeil & Hembree-Kigin, 2010). Furthermore, questions can also be essentially commands. McNeil and Hembree-Kigin (2010) suggest that this is often the most difficult “don’t” skill for parents to master.

The final skill parents are instructed to avoid during CDI, as well as in all parent-child interactions, is criticism and sarcasm. Criticism is avoided because it is not an effective way to address problem behavior. Furthermore, criticism and sarcasm result in negative parent-child interactions, which do not align with the goals of this phase (McNeil & Hembree-Kigin, 2010).

### **Parent-Directed Interaction Phase**

Following mastery of the CDI phase, the next step of the PCIT treatment model is the parent-directed interaction phase (PDI). In conjunction with the secure and positive parent-child relationship established during CDI, the skills presented in PDI focus on establishing effective discipline techniques, consistency, and limit setting to result in optimal child behavior (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010). The goal of this phase is to decrease undesirable and disruptive child behaviors through active

ignoring and discipline techniques, including time-out procedures (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010).

While continuing to give positive attention to the child's appropriate behaviors, during PDI, parents learn several skills for decreasing negative behaviors. Therapists convey the importance of consistency and predictability, teach how to give effective commands, and provide instruction regarding how to implement the time-out technique (Eyberg & Bussing, 2010; McNeil & Hembree-Kigin, 2010). During the PDI phase, one rule is consistently enforced: when told to do something, children must comply (McNeil & Hembree-Kigin, 2010).

**Consistency and predictability.** During the start of the PDI phase, the therapist conveys the importance of consistency and predictability. The therapist uses analogies and examples to demonstrate how important these features are, especially when responding to challenging behaviors. First, parents are expected to use the discipline skills taught during the PDI phase consistently. For instance, regardless of a parent's mood or the current circumstances, discipline procedures should be delivered the same way (McNeil & Hembree-Kigin, 2010).

Likewise, predictability is emphasized. This refers to the “‘Robot’ approach to discipline” (McNeil & Hembree-Kigin, 2010, p. 105). In this approach, parents should deliver consequences and commands using pre-established words with a neutral tone to ensure predictability, i.e. like a robot. This discourages children from pushing limits to evoke a parental response. To further develop this idea, McNeil and Hembree-Kigin (2010) suggest using the analogy of the “brick wall” and the “rubber band” (p. 105). When parents are perceived by their children as flexible (the rubber band) in their

consequences and rules, children will test until they reach the breaking point. With predictability and consistency, however, parents can avoid being perceived as flexible and instead be viewed as having firm and solid (the brick wall) rules and consequences.

**Effective commands.** During the PDI phase, parents are taught techniques for giving effective commands. Through mastering these skills, parents are able to increase child compliance (McNeil & Hembree-Kigin, 2010). According to this treatment approach, in order to be effective, commands should be direct, stated positively, given one at a time, specific, age-appropriate, given positively, explained only before they are given or after they are obeyed, and used only when necessary (Eyberg & Bussing, 2010; McNeil & Hembree-Kigin, 2010).

### **Empirical Base for Parent-Child Interaction Therapy**

Funderburk and Eyeberg (2010) suggest that since the development of PCIT in the 1970s, a significant amount of evidence for its support has been demonstrated through empirical studies. For instance, the Department of Clinical and Health Psychology of the University of Florida PCIT website (<http://pcit.php.ufl.edu/>) provides an extensive list of over one-hundred and fifty research studies related to PCIT. Additionally, following a meta-analysis and review, Thomas and Zimmer-Gembeck (2007) conclude that PCIT meets the criteria for a “well-established treatment” (p. 493). However, the authors note a lack of consistency among definition for “well-established” across disciplines and professional organizations. Their decision was based on the criteria for evidence-based practice proposed by the American Psychological Association (1995) and Chambless and Hollon (1998).

As previously indicated, PCIT was originally developed as a treatment for preschool children exhibiting disruptive and externalizing behaviors. Several studies (e.g., Boggs et al., 2004; Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998) have documented positive outcomes of PCIT for both parents and pre-school aged children. Findings have reported decreased parental stress, more positive parent-child interactions, more internal locus of control for parents, as well as higher parental tolerance for their child's behaviors (Boggs et al., 2004; Eisenstadt et al., 1993; Schuhmann et al., 1998).

Furthermore, following treatment, children exhibited a significant decrease in noncompliance, disruptive behaviors, and activity level (Eisenstadt et al., 1993). Additionally, a significant reduction in symptoms associated with Oppositional Defiant Disorder, Conduct Disorder, and Attention-Deficit Hyperactivity Disorder has been reported following the completion of PCIT (Eisenstadt et al., 1993). Notably, these gains have been maintained for one (Boggs et al., 2004) to six years (Hood & Eyberg, 2003) following treatment.

Not only have positive treatment effects been demonstrated for children with disruptive behavior, but PCIT has demonstrated efficacy with various clinical populations. For instance, initial empirical evidence supports the use of PCIT with children diagnosed with Separation Anxiety Disorder (e.g., Choate, Picnus, Eyberg, & Barlow, 2005), children in foster care (e.g., Timmer et al., 2006), children with Mental Retardation (e.g., Bagner & Eyberg, 2007), and children with physically abusive parents (e.g., Chaffin et al., 2004). Additionally, the impact of PCIT on child behavior has been demonstrated with various culturally diverse populations including Puerto Rican families

(Matos, Baurermeister, & Bernal, 2009) as well as Mexican-American families (McCabe & Yeh, 2009). Furthermore, improvements in child behavior during PCIT have been demonstrated to generalize to school environments (Funderburk et al., 1998).

### **Teacher-Child Interaction Therapy**

Teacher-Child Interaction Therapy (TCIT) is an adaptation of PCIT that uses the same theoretical basis but focuses on the teacher-child relationship instead of the parent-child relationship (McIntosh, 2010). Given the empirical support for PCIT, as well as the need for evidence-based treatments for early childhood settings, it is not surprising that several researchers have begun to explore an adaptation of PCIT. As such, in recent years, an increasing number of conference presentations, publications, and workshops have focused on TCIT (McIntosh, 2010).

### **Empirical Base for Teacher-Child Interaction Therapy**

In contrast to its predecessor PCIT, TCIT does not have a treatment manual (McIntosh, 2010). As a result, although the implementation and adaptations used in TCIT often have parallels between studies, there is also variation. Likewise, researchers have adapted PCIT into a teacher training model in order to serve various populations and needs. The empirical base for TCIT has grown to include a variety of methodological designs including intervention studies and preventive studies.

### **Intervention Studies**

**Case Studies.** McIntosh and colleagues (2000) are credited with conducting the first empirical exploration of using an adaptation of PCIT with teachers. The authors employed a single subject case-study design. Over a twelve week period, researchers

conducted TCIT with a first year teacher working at an integrated preschool. The school psychologist referred the teacher and child for the study. The child, Monisha, a two-year old African American female was exhibiting aggressive behaviors such as biting, hitting, scratching, pushing and kicking.

Through weekly 20 minute sessions, the researchers conducted 5 Child Directed Interaction (CDI) sessions and 7 Teacher Directed Interaction (TDI) sessions with the classroom teacher. Prior to implementation, baseline data were collected using the *Dyadic Parent-Child Interaction Coding System* (Eyberg & Robinson, 1983). This coding system allowed for the researchers to assess the teacher's use of the communication skills taught during CDI (reflections, imitation, behavioral descriptions, and praise) as well as the number of questions, critical statements, and commands. Furthermore, the measure allowed for researchers to assess Monisha's compliance or noncompliance with teacher commands.

Throughout the study the teacher increased her use of descriptive statements, praise, and reflective statements during the CDI phase. Furthermore, the teacher used fewer questions following the start of treatment. However, results indicated that the teacher did not always use these skills consistently. Throughout the TDI sessions, Monisha displayed fewer disruptive behaviors and increased compliance. This was measured by researchers recording instances of compliance, noncompliance, or disruptive behavior following teacher commands. Furthermore, as the sessions continued, the teacher had to use fewer commands to achieve compliance. The authors hypothesized this to be a result of the increased compliance (i.e., fewer commands were needed).

McIntosh (2010) also implemented TCIT in a second case study design. The experimental design of this study mirrored that of McIntosh and colleagues (2000). Again, TCIT was implemented over 12 sessions in order to help a preschool teacher address the needs of a disruptive student. The child, four year-old Jason, was displaying disruptive behaviors including hitting, kicking, and arguing with other children. Additionally, the *Dyadic Parent-Child Interaction Coding System* was used to measure teacher and child behavior. Results indicated that once again, the teacher's use of labeled praise, reflective statements, and behavioral descriptions increased over the course of treatment. Likewise, the teacher's use of questions decreased. As in the previous study, Jason's behavior was recorded in response to teacher commands. During the final two sessions of TDI, the number of commands corresponded with instances of Jason's compliance. In other words, Jason responded appropriately to all teacher commands. Additionally, Jason's aggressive behaviors (measured by frequency counts of hitting, yelling, arguing, and non-compliance) also decreased over the course of treatment. At a follow-up, three months after the termination of treatment, Jason maintained these improvements in behavior.

**Limitations.** Results from the previously reported case studies provide initial support for the use of TCIT within early childhood settings. However, several limitations are present. First, both studies focused mainly on assessing teacher's use of skills taught throughout TCIT training. Treatment compliance is undoubtedly desirable, however, the intended goal of PCIT, and in turn TCIT, is to optimize child behavior.

Although both McIntosh and colleagues (2000) and McIntosh (2010) measured child compliance to teacher command, this measure does not accurately or sufficiently



represent child behavioral change. The methods were especially lacking when considering generalization of child behavior to the classroom setting. Because the initial referral concern was classroom behavior, this shortcoming is notable. Both studies used a five-minute time sampling during sessions to monitor the child's compliance. However, the majority of observations were conducted during observation of therapy sessions that consisted of one-on-one interaction outside of the typical classroom environment. Additionally, this data was collected during CDI phases as well as TDI phases. Because the CDI phase is intended to limit commands and teacher-child conflict due to the therapeutic goals, these measures are not representative of clinically significant behavioral change. In other words, during the CDI phase, child compliance is likely to be overestimated. Conversely, during the TDI phase, the intended goal is for the teacher to practice and utilize effective discipline techniques. Once again, this measure of child compliance is unlikely to be a true representation with compliance being over-sampled. McIntosh (2010) did attempt to remedy this limitation by conducting classroom observations of target behavior. However, frequency counts were used instead of standardized measures of direct observation. No inter-rater agreement was reported.

**Treatment comparison.** Filcheck and colleagues (2004) conducted a study comparing the effects of teacher training (TCIT) and a whole-class token economy (The Level System). The interventions were implemented within a preschool classroom described as “out of control” (p. 353). The authors do not provide any additional information regarding child behaviors in the classroom. The class consisted of 17 children, a female teacher, and a teacher's aide. Throughout the course of the study,

several different aides were hired for the position (i.e., the teacher's aide was not the same individual throughout). Most of the children in the study were Caucasian.

Measures were used to collect data regarding child behavior, teacher behavior, as well as parent perspective. Several methods and instruments were used as measures of child behavior. Each day, the classroom was videotaped for one hour during structured circle-time activities. Researchers used the inappropriate behavior category from the School Observation Coding System (McNeil, Eyberg, Eisnestadt, Newcomb, & Funderburk, 1991) to measure child behavior. As a result, observers were able to calculate the frequency of inappropriate behaviors. The Conner's Global Index was also used to measure child behavior (Conners, 1997). The measure provides a score pertaining to disruptive behaviors and was completed by the teacher for each child at the end of each treatment phase. Finally, the teacher also completed a time-out log daily, which provided a frequency count of how often the time-out procedure was used.

Additionally, several aspects of teacher behavior and perspectives were measured. Three teacher behaviors (labeled praise, unlabeled praise, and criticism) were coded via observation of the videotapes. The *Dyadic Parent-Child Interaction Coding System* was used to measure these behaviors (Robinson & Eyberg, 1981). Additionally, teacher satisfaction was also measured via a scale developed by the researchers. The instrument contained 10 Likert scale items regarding satisfaction with each of the behavior management techniques. Finally, the researchers also examined parent perspectives. Through a 15 question interview conducted over the phone, parents rated the acceptability of various behavior management techniques. Interviews were

conducted prior to the implementation of the interventions as well as at the conclusion of the study.

During TCIT training, the teacher was trained during a 1-hour session for the CDI phase and a 1.5-hour session for the PDI skills. During the CDI phase, the teacher was taught to use labeled praise, reflection, imitation, descriptions, and enthusiasm.

Throughout the PDI phase, the focus was on effective instructions, using two-choice statements, and implementing effective time-out procedures. Following the teaching session, the teacher was also provided with two hours of coaching per condition.

Coaching sessions were conducted outside of the classroom environment. A mastery criterion was set for the CDI phase that included using 15 or more praises (at least 8 labeled), 25-30 behavioral descriptions and reflections, and a high level of enthusiasm (defined as a 4 or 5 on a 5-level scale) during a 5-minute observation.

Following the coaching sessions, the teacher was observed using the skills within the classroom environment. Immediate feedback was provided on the skills for 2 hours per condition. Throughout these phases, 5 hours and 30 minutes total were spent on CDI skills and 6 total hours were spent on PDI skills. The authors indicated that the teacher was coached on the CDI skills with one, two, and three children – each to mastery. However, it is unclear whether this time is included in or additional to the 2-hour coaching session.

The experimental design of the study followed an ABACC treatment comparison design. Condition A included baseline (eight observations) and withdrawal (six observations) during which the teacher used her typical behavior management strategies. During condition B, the Level System was implemented (28 observations). Conditions C

and C' included the two phases (CDI and PDI) of TCIT (seven and four observations, respectively). Finally, two follow-up observations were conducted four and a half months later.

In terms of children's behavior, results indicated that throughout both treatment phases, the amount of inappropriate behavior exhibited by children decreased, as measured by frequency counts. However, scores on the Conner's Global Index did not differ significantly between phases. The teacher also steadily increased the number of time-outs used throughout the study. The authors hypothesized that this was due to the increase in training on this procedure and therefore an increase in teacher confidence in using time-out.

Regarding teacher's behavior, the frequency of use of labeled praises increased during the Level System, decreased during the withdrawal phase, once again increased during the CDI phase, but decreased during PDI and follow-up. The teacher's use of criticism decreased slightly from baseline to the Level System phase, increased during the withdrawal phase, then decreased significantly during all TCIT phases and follow-up. When considering teacher satisfaction, the classroom teacher rated higher levels of satisfaction with her typical classroom management strategies than with the Levels System, but rated the TCIT intervention highest in terms of satisfaction. Finally, parents rated both intervention strategies as highly acceptable before and after the study.

**Limitations.** Although this study provides initial support for TCIT, in terms of decreasing children's disruptive behavior and shaping teachers' behaviors, methodological limitations are present. Because both interventions were implemented with the same classroom population and teacher, it is unclear if carry-over effects were

present. Therefore, although child outcomes were measured, it is difficult to discern the functional relationship between improvements in behavior and TCIT. Furthermore, during the TCIT phase, although additional coaching was provided, the teacher participated in only 2.5 hours of total training. Moreover, twenty-eight observations were conducted throughout the implementation of the token economy. During the TCIT phase, however, only eleven observations were conducted (seven during the CDI phase; four during PDI phase). Visual analysis of graphed data for these observation periods suggests variability in observed behavior. Therefore, the limited observations make it difficult to draw conclusions regarding the impact of TCIT on behavior. Finally, treatment integrity was not assessed for the TCIT phase.

### **Preventative Studies**

In addition to the aforementioned intervention studies, some researchers investigating TCIT have adapted the treatment program as a preventative model. Tiano and McNeil (2006) as well as Lyon and colleagues (2009) implemented TCIT at a classroom level. In both empirical studies, the researchers hypothesized that instruction and training on TCIT skills would result in overall more effective classroom management. A detailed description regarding the rationale for using PCIT within a preventative framework is provided by Gershenson and colleagues (2010).

**Participants.** Tiano and McNeil (2006) used random assignment to divide eight Head Start classrooms into treatment and control groups. The study included seven teachers (four treatment, three control) and 25 children (13 treatment, 12 control). Similarly, Lyon and colleagues (2009) implemented TCIT within four classrooms in an

urban, care center comprised of predominately children of low socio-economic status. The sample included four teachers and 78 children.

**Measures.** In both studies, researchers used the *Dyadic Parent-Child Interaction Coding System* to monitor teacher behaviors. Both groups of researchers recorded teacher labeled and unlabeled praise, as well as criticism. Lyon and colleagues (2009) also measured instances of behavioral descriptions, reflections, as well as “only talk” which the authors defined as teacher verbalizations that could not be classified in the aforementioned categories (p. 864).

Tiano and McNeil (2006) also included measures of child behavior. First, researchers asked teachers to complete a daily time-out log, which included frequency counts. Additionally, teachers completed an evaluation of classroom manageability, based on a five-point Likert scale. This scale was completed daily for five days pre- and post-intervention. As an additional measure of child behavior, researchers in this study also completed the *Revised Edition of the School Observation Coding System* (Jacobs, Boggs, & Eyberg, 2000). Child behaviors (inappropriate and appropriate) were coded simultaneously with the aforementioned teacher behaviors.

**Experimental Design.** Both studies included a group training design, during which teachers received instruction in the two TCIT phases within a group setting (Lyon, Gershenson, Farahmand, Thaxter, Behling, & Budd, 2009; Tiano & McNeil, 2006). However, the time spent training varied between studies. Lyon and colleagues (2009) conducted 1.5 hour weekly training sessions over a nine-week period (four CDI, four PDI, and one wrap-up session). Following group training sessions, teachers received individual coaching within the classroom for 20 minutes one to three times per week.

Tiano and McNeil (2006) conducted two 2-hour training sessions presented in a group format. Following training on PDI and CDI skills, teachers received in-room coaching. Coaching continued until teachers met predetermined mastery criteria. On average, teachers received 7 hours of in-room coaching.

Furthermore, both researcher groups adapted the time-out procedure. Tiano and McNeil (2006) instructed teachers regarding the “Thinking Chair” procedure (p. 226). Similarly, Lyon and colleagues (2009) used a “Sit and Watch” procedure (p. 870). When implementing TCIT, both groups also adapted PCIT skills to be taught for use with individual children, small groups of children, as well as the entire classroom. As previously indicated, Lyon and fellow researchers (2009) collected baseline data on all classrooms, randomly assigned classrooms into treatment and control groups, implemented the intervention, and then compared post-intervention data. Tiano and McNeil (2006), on the other hand, implemented a two-stage multiple baseline design.

**Results.** In terms of teacher outcomes, results from both studies were positive. Tiano and McNeil (2006) found that teachers gave significantly more labeled praise following treatment. Likewise, Lyon and colleagues (2009) reported that teachers demonstrated an increase in positive attention skills, although changes had small to moderate effect sizes. Furthermore, results also indicated teachers with lower levels of participation also demonstrated lower levels of behavioral change. Finally, teachers reported high levels of acceptability.

Regarding child behavior, Tiano and McNeil (2006) found that teachers in the treatment group gave significantly fewer time-outs post-treatment compared to baseline. However, child behavior, as measured by classroom manageability as well as frequency

of inappropriate and appropriate behavior, improved for both groups. The authors note that during baseline, both classrooms reported low percentages of inappropriate behavior. Therefore, the researchers hypothesized that, as a result of indicated low levels of problem behaviors, the measures may not have been sensitive to small changes in child behavior.

**Limitations.** As argued by Gershenson and colleagues (2010), skills taught to teachers during TCIT may positively impact classroom environment, improve child behavior, and decrease teacher burn-out. However, this application is contrary to the initial treatment goals and design of PCIT. As indicated by Funderburk and Eyberg (2010), PCIT was originally developed for use with children displaying disruptive and externalizing behaviors. Although this treatment modality may be appropriately adapted into a preventative framework, the efficacy of the adaptation for use with teachers has not yet been established.

Further limitations also exist within the previously presented studies. First, Tiano and McNeil (2006) only conducted one observation pre-intervention and one observation post-intervention, each lasting approximately 40 minutes. This observational data may not be an adequate representative sample of behavior. Furthermore, teachers only received two 2-hours training sessions in the study by Tiano and McNeil (2006). Similar to previously presented studies, Lyon and fellow researchers (2009) did not measure child outcomes. Tiano and McNeil (2006) did include measures of child behavior, but the data did not provide a representative sample of behavior.

### **Future Directions**



Although a review of the previously discussed studies provides initial support for the adaptation of PCIT to use with teachers, further investigation of this possibility is warranted. Results of prior empirical studies have demonstrated the initial success of TCIT regarding the impact on teacher behavior. All of the studies conducted thus far on TCIT reported some positive change in teacher behavior, generally increased use of the TCIT skills.

However, child outcomes have been inconsistently reported or measured. When considering the five empirical studies previously presented, only three included a measures of child outcomes. This seems counterintuitive because, as formerly stated, the intended goal of TCIT is to improve child behavior (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010).

Although researchers may hypothesize that teachers' use of skills taught through TCIT may positively impact behavior, this relationship has not yet been firmly established by empirical evidence. Of those studies which did include outcome measures of child behavior (i.e., Filcheck, et al., 2004; McIntosh, 2010; Tiano & McNeil, 2006), several limitations were present including carryover effects, inadequate sampling of behavior, and limited ability to generalize results.

Furthermore, although TCIT has been implemented with at-risk populations, no studies have investigated the use of this treatment with a clinical population. Once again, paucity of research in this area is surprising considering the foundation of PCIT on which TCIT was built. PCIT was intended for use with children exhibiting significant behavior problems (Funderburk & Eyberg, 2010). Moreover, empirical support is building for use of PCIT with a variety of clinical populations (e.g., Bagner & Eyberg, 2007; Chaffin et

al., 2004; Choate, Piccus, Eyberg, & Barlow, 2005; Timmer et al., 2006). Therefore, a logical adaptation of PCIT for use with teachers would be its application and efficacy with clinical populations.

### **Summary**

PCIT is an empirically-supported treatment which has a dual focus on enhancing parent-child relationships as well as beneficially impacting children's behavior by increasing positive, prosocial behaviors while decreasing disruptive, noncompliant behaviors (Eyberg & Bussing, 2010; Zissser & Eyberg, 2010). PCIT is based on a theoretical foundation of attachment theory, social learning theory, Baumrind's (1966) theory of parenting styles, as well as operant behavior.

Teacher-Child Interaction Therapy (TCIT) is an adaptation of PCIT that focuses on the teacher-child relationship instead of the parent-child relationship (McIntosh, 2010). The theoretical and empirical basis for PCIT provides the foundation for the appropriate and effective application of this treatment model for use within the early childhood classroom. Recent empirical evidence has provided initial support for the positive impact of TCIT on teacher behavior (e.g., Filcheck, McNeil Greco, & Bernard, 2004; Lyon et al., 2009; McIntosh, 2010; McIntosh, Rizza, & Bliss, 2000; Tiano & McNeil, 2006). However, more research is needed to explore the impact of TCIT on child behavior as well as the efficacy of this treatment with a clinical population.

## Chapter III: Methods

### **Methodology**

The efficacy of Teacher-Child-Interaction Therapy (TCIT) on child behavior was evaluated through a single subject A-B design conducted across subjects. This research design was deemed most appropriate and advantageous to address the research questions. Baer and colleagues (1968) note the utility of single subject designs when conducting applied behavior research. Compared to laboratory research, which provides the researcher the opportunity for strict and stringent control over variables, applied research generally does not have this luxury. Regardless of this, however, applied behavioral research still bears the responsibility of demonstrating adequate control to reliably attribute behavioral change to the applied intervention.

As a result of the applied nature of this methodology, single subject research is particularly applicable when working within classroom settings and with low incidence populations (Horner et al., 2005). In fact, single subject research designs are particularly applicable when exploring the efficacy of interventions within special education classrooms. In light of recent emphasis placed on accountability and the implementation of evidence-based practices within educational settings, establishing evidence-based practices calls for means to identify interventions supported by an empirical basis (Tankersley, Cook, & Cook, 2008).

When considering the exploration of practices within special education classrooms, identifying evidence-based interventions can be challenging. Interventions and practices utilized in special education classrooms oftentimes target “low-incidence or heterogeneous populations” (Horner et al., 2005, p. 173). Although a population

characterized as such would pose challenges in group experimental designs, single subject methodology allows clinicians and researchers to explore the efficacy of practices due to the focus placed on the individual. As Horner and colleagues (2005) note, the methodology focuses on the individual, just as interventions target individual students within special education classrooms. In other words, single subject research design aligns with applied classroom practices and existing frameworks within classroom environments.

Furthermore, although results from controlled experiments based in laboratory settings have high levels of experimental control, the findings often do not generalize easily to a naturalistic setting. Single subject methodology, conversely, provides a foundation for empirically testing interventions within an applied, practical setting (Horner et al., 2005). As a result, single subject design allows for practitioners to consider “the *process* of change as well as the *product* of change” (p. 175). Single subject design utilizes practical procedures that are oftentimes cost-effective to evaluate the efficacy of practices. This allows for researchers to consider contextual challenges, while still demonstrating causal relationships. Additionally, single subject research design also allows practitioners and researchers to explore and identify individuals that do not respond to treatment or interventions as anticipated.

Through replication across subjects utilizing a single subject research design, the researcher is able to demonstrate a causal relationship between the behavioral change and the implementation of the experimental intervention. In other words, by first demonstrating a stable baseline for each subject, followed by behavioral change as the intervention is applied for each subject, a relationship between the dependent and

independent variables is demonstrated (Richards, Taylor, Ramasamy, & Richards, 1999). With each replication across each subject, the strength of the argument is reinforced.

In regards to examining the impact of TCIT on child behaviors, single subject research methodology is the most appropriate design. The intervention will be conducted within a special education classroom in order to evaluate the impact on a heterogeneous sample (i.e., young children diagnosed with a disruptive behavior disorder). Conducting TCIT within the natural classroom environment will maximize the clinical significance of the findings. Through utilization of an across subject design, the researcher will maintain the ability to reliably demonstrate a functional relationship between behavioral change and TCIT without the degree of control which is plausible only within a laboratory.

### **Participants**

Four preschool children were included in the study. All children attended a therapeutic preschool for children with emotional and behavioral needs in Southwestern Pennsylvania. All children who participated in the study had clinical diagnoses characterized as Disruptive Behavior Disorders by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) (American Psychiatric Association, 2000). All children's diagnoses were determined following an evaluation conducted by a licensed psychologist. Participants' ages were reported at the time of the start of data collection. All four children attended the therapeutic preschool program five days a week and participated in the same milieu classroom environment.

Joshua was a five-year-one-month-old biracial male diagnosed with Disruptive Behavior Disorder, NOS, Anxiety Disorder, NOS, and Attention-Deficit Hyperactivity Disorder. Throughout the study, Joshua received individual play therapy as well as

pharmaceutical interventions. Throughout the study, Joshua was prescribed a hypertensive for his inattentive and impulsive behaviors. Ethan was a four-year-eleven-month-old African American male diagnosed with Attention-Deficit Hyperactivity Disorder. Throughout the course of the study he also participated in individual play therapy provided by the center. During the second week of the teaching phase, Ethan began taking a stimulant medication for his hyperactive symptoms.

Scott was a four-year-two-month-old African American male with a diagnosis of Disruptive Behavior Disorder, NOS. Scott also received individual play therapy throughout the course of the study. Finally, Alex was a four-year-four-month-old Caucasian male. He has a diagnosis of Attention-Deficit Hyperactivity Disorder, as well. Alex also participated in weekly play therapy sessions throughout the course of the study. Alex was prescribed a hypertensive and a stimulant for his inattentive behaviors and impulsivity.

Four teachers participated in Teacher-Child Interaction Therapy (TCIT). All four teachers staffed the preschool classroom daily. Teacher A, the lead teacher for the preschool room, was a Caucasian female with a M.Ed. in Early Childhood and Elementary Education and a B.S. in Music Therapy. Teacher A had been working in the field for six years. Teacher B, who provided mental health support to the classroom, was a Caucasian female with a BA in Psychology with a Concentration in Development Psychology. She had been working in the field for ten years. Teacher C was an African American female with over twenty years of experience working in the field. Teacher D, an African American male, reported over ten years of experience working with children.

Both Teacher C and Teacher D have fulfilled the requirements for a Child Development Associate credential.

One staff psychologist and two advanced doctoral students participated as coaches throughout the study. The psychologist, a Caucasian female, had an MA and PsyD in Clinical Psychology. She had been working in the field for twenty-one years and had been licensed as a psychologist for three years. The psychologist also completed training and supervision requirements for Parent-Child Interaction therapy, as outlined by PCIT International ([www.pcit.org](http://www.pcit.org)). Both graduate students were fourth year, doctoral school psychology students.

## **Measures**

### **The Preschool Observation Code**

*The Preschool Observation Code* (POC; Bramlett, 1993) was a direct observation coding system designed to assess and monitor behavior of preschool children. This code was developed to address the unique contextual and child factors associated with early childhood environments (Barnlett & Barnett, 1993). In other words, early childhood environments encompass different activities and child-teacher interactions than in elementary or secondary settings.

Likewise, the behaviors coded on the POC were chosen to link assessment to intervention. Bramlet and Barnett (1993) indicate that the code was specifically developed for use by mental health and education practitioners to assess problematic situations and challenging student behaviors, including conduct problems, social withdrawal, attention problems, and pre-academic difficulties. Therefore, practitioners can utilize the POC to determine the impact of intervention on frequently occurring

problem behaviors within early childhood. In other words, the POC monitors those behaviors that are likely the focus of intervention.

The POC coding system examined both state and event behaviors as well as the classroom structural format. Structural format refers to the overall status of the classroom activity, such as large group instruction, small group instruction, free play, or individual seatwork. Conversely, state behaviors are coded using a momentary time sampling procedure, allowing the observer to estimate for what percent of the observation period the behavior occurred. The POC allowed the observer to record nine state behaviors, including play engagement, pre-academic engagement, non-purposeful play, unoccupied or transitional behaviors, disruptive behaviors, self-stimulating behaviors, other behavior, social interaction – peer, and teacher monitoring/interaction.

Event behaviors were coded using a frequency count to provide an estimated rate of certain behaviors. Event behaviors were divided into two categories, including child behavior and teacher-child interactions. The child behavior category included activity changes, negative verbal interaction, positive motor interaction, negative motor interaction, and disruptive behaviors. The coding categories of teacher-child interactions included the following: child approaches the teacher, teacher commands – alpha, teacher commands – beta, child compliance, teacher approval, and teacher disapproval.

### **The Dyadic Parent-Child Interaction Coding System**

In addition to the POC, the *Dyadic Parent-Child Interaction Coding System* (DPICS; Eyberg & Pincus, 1999) was also used throughout the study. Although originally intended for use with parents, for this study, the DPICS was used to code teacher-child interactions. Prior to each coaching session and during select special time



sessions, data was collected using the DPICS to serve multiple purposes. Each DPICS observation period consisted of a five-minute observation. First, the data provided information regarding the skills and needs of each teacher to inform coaching. Additionally, this measure provided researchers with information regarding the teacher's use and mastery of the PRIDE skills.

### **Interrater Reliability**

Prior to conducting classroom observations as well as observations of teacher-child interactions, all researchers established a level of reliability between raters. For the POC, prior to conducting observations, each researcher successfully completed training quizzes provided in the manual. Then, each observer demonstrated adequate levels of agreement with each of the other two observers during three sample observations. For each observer dyad, average rates of agreement across the three training observations were 93.3%, 87.6%, and 96.2% respectively. Prior to completing observations using the DPICS, all observers completed training and practice quizzes with a licensed psychologist who has received training in PCIT. Researchers attended six (6) hours of training sessions with the licensed psychologist. During training, researchers completed training quizzes, practice worksheets, and sample coding sessions. During the intervention phase, two observers completed DPICS measures for 43.8% of sessions. Observers demonstrated high levels of agreement (98.2%) using the DPICS measure during the intervention phase.

To ensure accurate and reliable collection of treatment integrity data, inter-rater reliability data was collected throughout observations. During classroom observation sessions, two observers completed the POC. Two observers were present during 30.3% of

observation periods. Following the observation, frequency data was compared and a percent of agreeability was calculated. Interrater reliability was found to be at an acceptable level of 99.4% across observations.

### **Research Design**

A single subject A-B across participants design was used to evaluate the effects of the TCIT intervention. This design included a baseline phase for each child's behavior prior to implementation of the intervention, a coaching phase, and a maintenance phase.

The baseline phase involved seven twenty minute observations of each child's behavior in the classroom setting. Although baseline was intended to be three observations, the phase was extended to accommodate extended child and teacher absences. Furthermore, the extended baseline was utilized due to the highly variable nature of the behaviors measured by the POC. Due to absences, Alex was observed six times during baseline. Joshua was observed for an additional observation period in an attempt to establish a more consistent baseline.

After baseline data was collected, the TCIT intervention was introduced and the coaching phase began. During the teaching phase, teachers were introduced to the positive communication skills during three one-hour meetings as well as classroom consultation. During this phase, teachers received in-classroom coaching. Throughout all phases, observations using the POC were conducted to continue gathering baseline data for the other children. Because mastery criteria were not met by the teachers, the coaching phase lasted for fourteen (14) coaching sessions. Finally, following completion of the TCIT intervention, maintenance data were collected using direct observation.

## **Procedures**

### **Baseline**

The POC was used to collect baseline data. Advanced graduate students completed the observations for each target child. Each graduate student had demonstrated mastery of the POC through competent performance on practice protocols provided in the manual for POC. Observations were conducted in the therapeutic classroom environment during various times of the day (i.e., centers, circle time, story time, etc...). Each child was observed during the same time of day and activity in order to allow for comparison across phases. For instance, Joshua was observed during morning free play before breakfast, Ethan was observed during morning free play following breakfast, etc. All observations lasted the length of the classroom activity (i.e., free play) which was approximately twenty-minutes.

### **Intervention Phase**

Following baseline, the coaching phase began. During this phase, classroom teachers participated in several training sessions on the framework of TCIT and the positive communication (i.e., PRIDE) skills. Classroom teachers attended three one-hour long training meetings. A licensed psychologist with certification in PCIT conducted the training sessions with participating teachers. Two advanced graduate students who participated as coaches also attended. Teachers had been introduced to the TCIT framework previously during yearly in-service training at the center. As a result, the content of the meetings included several tasks in preparation for the coaching phase including: reviewing the skills, examples and practice of how coaching will be utilized

(e.g., what kinds of things the coach will say), establishing a schedule for coaching, and addressing any questions or concerns.

During the second and third week of the training, classroom consultation was introduced. The three coaches (licensed psychologist and two advanced graduate students) spent one hour per week in the classroom. This time was used to plan and prepare for logistical difficulties related to the coaching phase. These issues included where the coach will be located and where the teacher would be. Following this initial introduction, in-vivo classroom coaching began within the classroom. A licensed psychologist trained in PCIT as well as two advanced graduate students acted as coaches during this phase.

Each week during coaching, classroom teachers participated in a 30 minute in-room coaching session held in the classroom. For as many sessions as possible, the same coach worked with the same teacher. This allowed for the coach to establish rapport with the teacher as well as gain a more comprehensive understanding of the teacher's needs and skills. During this session, an advanced doctoral student or the licensed psychologist worked in the classroom with the teachers providing them with immediate feedback on their use of the skills. For the first five minutes of each coaching session, the coach used the DPICS to collect data regarding the teacher's use of the PRIDE skills. This data was then used to inform the topic(s) of the coaching session. For example, if teachers were not effectively using behavioral descriptions, this skill would be the focus of the coaching session.

Coaches utilized in-vivo coaching. This method was selected for several reasons. First, because coaching was conducted in the classroom, the high level of background

noise made it difficult for teachers to hear coaches utilizing a bug-in-the-ear technique. Additionally, several teachers expressed concern about feeling uncomfortable with using the bug-in-the-ear. Therefore, the coaches decided to utilize in-vivo coaching during this phase.

In-vivo coaching consisted of the coach sitting in close proximity to the classroom teacher during free play. The coach praised the teacher's use of the skills while modeling and instructing the teacher on increasing use of the positive communication techniques. For example, if the teacher asked a question, the coach may whisper to the teacher "Oops! That was a question. Try restating that into a behavior description." Following the coaching sessions, teachers had an opportunity to debrief with the coach. Coaching was then individualized to meet the needs of each teacher. For instance, for one teacher who had difficulty avoiding questions, the coach would simply say "question" and the teacher would know she was being instructed to rephrase it.

Additionally, weekly homework assignments were given. Teachers were asked to practice the skills for five-minutes each day, except for their designated coaching day. Then, teachers completed the weekly homework sheet. On the handout, each teacher indicated if he/she had practiced for 5 minutes that day, toys used, and any questions or comments. Teachers participated in the Child-Directed Interaction phase (CDI) for the duration of the intervention.

Throughout this phase, target children were observed once a week using the POC. Observations were conducted during the same time and activity that was utilized during baseline to allow for comparison across phases. During this phase, researchers varied the days on which observations were conducted.

## **Maintenance**

Maintenance procedures were similar to baseline procedures. Following the intervention phase, coaching was no longer implemented within the classroom environment. During the maintenance phase, students were observed in the classroom setting using the POC. For each child, three twenty-minute observations were conducted at random times throughout the maintenance phase. Observations occurred for two weeks following the cessation of coaching sessions. Additional observations were then completed one and two months following the completion of the coaching phase.

## **Data Analysis**

### **Visual Analysis of Graphed Data**

As indicated by Richards and colleagues (1999) visual analysis is frequently used by researchers to analyze results of single-subject research. Visual analysis of graphed data can be utilized to examine behavioral changes across and within phases. To examine data within a phase, the following factors were taken into consideration: the number of data points within a phase, the variability in performance, the level of behavior, and trend of the data.

First, it is imperative that the number of data points within a phase sufficiently “represents performance on the dependent variable” (Richards, et al., 1999, p. 268). In order to determine the number of necessary data points, the researcher should consider the nature of the variable being measured. The less likely the variable is to change without a phase change, the fewer data points are necessary. Similarly, when considering

variability within performance, the more fluctuation in an individual's behavior, the more data points are necessary in order to draw conclusions.

Level of behavior refers to changes in the target behavior. In other words, when analyzing data, researchers should consider “jumps in the data path” (p. 269). When considering behavioral change within a phase, median or mean lines can be utilized in order to determine the overall level of behavior. Richards and colleagues (1999) recommend that the more variability within the level of behavior, the more preferable the median line of performance becomes when analyzing data. Finally, when visually inspecting data within a phase, researchers can also consider trend. Trend refers to the direction of the path of the plotted data. In other words, is the data increasing, decreasing, flat, variable, or stable?

Although visual analysis within phases provides the researcher with valuable information about the nature of the data, visual analysis across phases allows for greater interpretation of the relationship among the dependent and independent variables (Richards, et al., 1999). When analyzing graphed data across phases, the researcher considers immediate change in level, performance across phases, and trend changes. An immediate change in level following a phase change is a strong indicator of the functional relationship between variables. In other words, it is likely that the intervention had some impact on behavior. Additionally, a steady change over a number of data points may also be evidence of behavioral change despite the lack of an immediate jump.

Comparing performance across phases allows the researcher to assess the effect of the intervention on behavior. When data across phases does not overlap, this is indicative of behavioral change as a result of the independent variable (Richards, et al., 1999).

Researchers can compare the entire range of points within phase or median/mean lines for each phase. A percentage of overlapping points can be calculated in order to estimate the impact of the intervention. A lower percentage of overlapping points is indicative of a greater influence of the intervention on behavior. Analysis of trend changes across phases utilizes similar techniques as to considering trend within phases, as described previously.

### **Research Questions and Hypotheses**

*Research Question 1:* Does TCIT training significantly reduce the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting?

*Hypothesis 1:* TCIT training will significantly reduce the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting as measured by the POC.

*Research Question 2:* Does TCIT training significantly increase prosocial behavior of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting?

*Hypothesis 2:* TCIT training will significantly increase prosocial behavior of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting, as measures by the POC.

*Research Question 3:* Does TCIT training positively impact teacher-child relationships and increase teachers' use of positive attention skills within the classroom environment?

*Hypothesis 3:* Teacher-child interactions, as measured by the POC, and teachers' use of positive attention skills, as measured by the DPICS, will be improve following the implementation of TCIT.



*Research Question 4:* Are behavioral gains of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting maintained following the removal weekly classroom coaching?

*Hypothesis 4:* Behavioral gains of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting will be maintained following the removal of weekly coaching sessions.

## Chapter IV: Results

### **Single Subject Visual Analysis of Data**

Visual and statistical analyses were used to analyze the current results. As previously described, child behavioral data was collected throughout Teacher-Child Interaction Therapy (TCIT) implementation using the Preschool Observation Code (POC). The POC allows the observer to document twenty behavioral domains. For the current study, only those behavioral categories representative of the behaviors identified in the research question are included. By graphing the data, visual analysis allows for examination of child behavioral data within and across phases. Visual analysis of the graphed data also demonstrates any variability in performance, level, and trend both within and across phases (Richards, et al., 1999).

#### **Research Question 1**

*Research Question 1:* Does TCIT training significantly reduce the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting?

*Hypothesis 1:* TCIT training will significantly reduce the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting as measured by the POC.

Visual analysis of graphed data considered behavioral categories of the POC which are representative of symptoms consistent with a diagnosis of Disruptive Behavior Disorders. Results are reported as the percentage of intervals in which the behavioral category was coded. In terms of State Behaviors, the Disruptive Behavior category was included in analyses. As previously indicated, State Behaviors were recorded using a

momentary time sampling procedure. The following Event Behavior categories were also considered: Disruptive Behavior, Negative Verbal Interaction, Negative Motor Interaction, and Teacher Disapproval. Many of the behavioral categories included clearly represent behaviors consistent with Disruptive Behavior Disorders. Throughout the results sections, Disruptive Behavior (E) designates the Event category, whereas Disruptive Behavior (S) indicates the State category. Figures 2 through 3 display graphed data for each behavioral category.

**Joshua. *Baseline.*** Joshua's mean percentage of Disruptive Behaviors (E) observed in the classroom environment during baseline was approximately 20.2%, with a median of 18.2%. Similarly, his mean percentage of Disruptive Behaviors (S) during baseline was approximately 23.1%, while his median percentage was 24.0%. Joshua's mean percentage of Negative Verbal Interactions observed in the classroom environment during baseline was approximately 26.5% with a median of 28.8%. Joshua's mean percentage of Negative Motor Interactions during baseline was approximately 13.1%, with a median of 16.1%. Finally, Joshua's mean percentage of Teacher Disapproval during baseline was 12.3%, with a median was 14.6%.

Across the baseline phase, Joshua's behavior was variable. However, linear trend line analyses suggest an overall increase in Disruptive Behavior categories, Negative Verbal Interactions, and Teacher Disapproval. A decreasing trend was noted for Negative Motor Interaction; however, the decrease was slight.

***Intervention.*** As previously indicated, the intervention phase for this study consisted of in-vivo classroom coaching. Throughout this phase there was an overall reduction of behavioral categories consistent with disruptive behaviors. Furthermore,

observation data became more stable throughout the intervention phases. The range and variability of behavioral data decreased throughout this phase. All disruptive behavioral categories had a downward trend throughout intervention phases. Additionally, observation data suggest an immediate change in trend and level following the implementation of the coaching phase. A summary of mean and median percentages for each behavioral category are displayed in Tables 2 and Table 3, respectively.

***Maintenance.*** Following the removal of classroom coaching, observation data was collected in order to gain an estimate of maintenance of behavioral gains. Joshua's behavioral gains improved across all categories during the maintenance phase. Mean and median percentages for maintenance are reported in Table 2 and Table 3, respectively.

Table 2

*Mean Percentages of Joshua's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	23.1	3.7	0.8
Disruptive Behavior (E)	20.2	5.0	2.3
Negative Verbal Interaction	26.5	5.2	3.4
Negative Motor Interaction	13.1	1.9	2.1
Teacher Disapproval	12.3	4.4	4.2

Table 3

*Median Percentages of Joshua's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	24	0	0
Disruptive Behavior (E)	18.2	1.25	2.5
Negative Verbal Interaction	28.8	5.0	3.6
Negative Motor Interaction	16.1	0.0	2.1
Teacher Disapproval	14.6	2.7	4.2

**Ethan. Baseline.** Mean and median percentages were also calculated for Ethan's behaviors across baseline. Ethan's mean percentage of Disruptive Behaviors (E) observed in the classroom environment during baseline was 27.9%, with a median of 29%. Ethan's mean percentage of Disruptive Behaviors (S) during baseline was 30.2%, with a median of 29.7%. His mean percentage of Negative Verbal Interactions during baseline was 18.9%, with a median of 12.5%. Ethan's mean percentage of Negative Motor Interactions during baseline was a mean of 9.8%, with a median of 8.6%. Finally, Ethan's mean percentage of Teacher Disapproval during baseline was 17.5%, with a median of 14.3%.

Ethan's observed behavior during baseline was also variable. Trend analysis suggests an upward trend during baseline observations in both Disruptive Behavior categories. The remaining behavioral domains, including Negative Motor Interaction, Negative Verbal Interaction, and Teacher Disapproval, had an overall downward trend. For example, during one baseline observation, Ethan's percentage of Disruptive Behavior (S) reached 60% and frequently was observed to be approximately 30% or above.

**Intervention.** Visual analyses of data suggest an immediate change in level and trend following the implementation of intervention phases. Overall level of behavior was reduced, as evident by the average percentages for each phase of the intervention. As indicated in Table 4 and Table 5, mean and median percentages decreased across behavioral domains. Trend analysis also suggests a downward trend across the intervention phase. During the coaching phase, Ethan was removed from the classroom milieu and transferred to another classroom due to family circumstances. As a result, observation data for twelve (12) coaching sessions were available. No maintenance data was able to be collected.

Table 4

*Mean Percentages of Ethan's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	27.9	6.9	--
Disruptive Behavior (E)	30.2	4.8	--
Negative Verbal Interaction	18.9	3.6	--
Negative Motor Interaction	9.8	3.4	--
Teacher Disapproval	17.5	4.6	--

Table 5

*Median Percentages of Ethan's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	29.0	2.6	--
Disruptive Behavior (E)	29.7	3.2	--
Negative Verbal Interaction	12.5	3.6	--
Negative Motor Interaction	8.6	3.4	--
Teacher Disapproval	14.3	5.3	--

**Alex. Baseline.** Alex's mean percentage of Disruptive Behavior (S) observed in the classroom environment during baseline was 8.8%, with a median of 3.2%. Alex's mean percentage of Disruptive Behaviors (E) during baseline was 5.6%, with a median of 0%. Alex's mean percentage of Negative Verbal Interactions during baseline was 5.3%, with a median of 5.0%. Alex's mean percentage of Negative Motor Interactions during baseline was of 3.1%, with a median of 1.9%. Finally, Alex's mean percentage of Teacher Disapproval during baseline was 1.7%, with a median of 1.0%. Similar to previously reported data, Alex's data was also variable across the baseline phase. However, trend analysis revealed all categories representative of disruptive behaviors had an upward trend. Although Alex's level of disruptive behaviors was not as elevated as

those of Ethan or Joshua, his level also reached clinically significant levels. For instance, his Disruptive Behavior (S) reached approximately 26% for one observation.

***Intervention.*** A review of data presented in Tables 6 and 7 reveal a similar pattern in Alex’s behavioral observation data. Due to absences, twelve (12) data points were collected during the coaching phase. Following the implementation of the coaching phase, there was an immediate change in level and trend of the data. Throughout intervention phases, behavior across domains follows a downward trend. Additionally, observational data continued to stabilize over the course of the intervention phases. As indicated by the values presented in Table 6 and Table 7, all behavioral categories indicate decreases in level across phases.

***Maintenance.*** Following the removal of classroom coaching, behavioral gains were generally maintained. This is evident by the continued decrease in overall level of behavior, in all behavioral categories except for Disruptive Behavior (S). Although a slight increase in mean percentage is noted from the coaching to maintenance phase, the average percentage of disruptive behavior in the maintenance phase did not reach pre-intervention levels.

Table 6

*Mean Percentages of Alex’s Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	8.8	1.9	2.4
Disruptive Behavior (E)	5.5	2.5	0.0
Negative Verbal Interaction	5.3	1.0	0.8
Negative Motor Interaction	3.1	0.5	0.0
Teacher Disapproval	1.7	2.3	0.8

Table 7

*Median Percentages of Alex's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	3.2	0.0	0.0
Disruptive Behavior (E)	0.0	0.0	0.0
Negative Verbal Interaction	5.0	1.0	0.0
Negative Motor Interaction	1.9	0.0	0.0
Teacher Disapproval	1.0	0.0	0.0

**Scott. *Baseline.*** Scott's mean percentage of Disruptive Behaviors (S) observed in the classroom environment during baseline was 1.3%, with a median of 0.0%. Scott's mean percentage of Disruptive Behaviors (E) during baseline was 0.9%, with a median of 0.0%. Scott's mean percentage of Negative Verbal Interactions during baseline was 3.4%, with a median of 1.0%. Scott's mean percentage of Negative Motor Interactions during baseline was 0.3%, with a median of 0.0%. Finally, Scott's mean percentage of Teacher Disapproval was 1.0%, with a median of 0.0%.

A trend analysis revealed that Scott's Disruptive Behavior (S), Disruptive Behavior (E), Negative Motor Interaction, and Teacher Disapproval had an upward trend. His Negative Verbal Interaction were trending downward. Overall, Scott's level of behavior was lowest compared to the other children participating in the study. However, he did engage in high percentages of disruptive behaviors on occasion. For example, during one observation, his level of Disruptive Behaviors (E) reached 20%. However, elevated levels were observed less frequently for Scott compared to the other children included in the study.

***Intervention.*** A review of observation data for Scott also reveals an overall decrease in level during intervention phases, in all categories except Teacher



Disapproval. Likewise, all behavioral data, except for Negative Motor Interaction, maintained a downward trend following a trend analysis. Behavioral data stabilized across intervention phases, as well. An immediate change in level was noted between baseline and coaching phases. Average and median percentages throughout phases are reported in Tables 8 and 9.

***Maintenance.*** Once again, the majority of behavioral gains were maintained following the removal of classroom coaching. Due to absences, maintenance data was collected for Scott at two weeks and one month following the end of coaching. Gains were maintained in Disruptive Behavior (S), Negative Verbal Interaction, Negative Motor Interaction, and Teacher Disapproval. However, Scott's average percentage of Disruptive Behavior (E) increased to pre-intervention levels.

Table 8

*Mean Percentages of Scott's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	1.3	0.0	0.0
Disruptive Behavior (E)	0.9	0.0	1.5
Negative Verbal Interaction	3.4	0.8	0.0
Negative Motor Interaction	0.3	0.2	0.0
Teacher Disapproval	1.0	1.1	0.0

Table 9

*Median Percentages of Scott's Disruptive Behaviors across Phases*

	Baseline	Intervention	Maintenance
Disruptive Behavior (S)	0.0	0.0	0.0
Disruptive Behavior (E)	0.0	0.0	1.5
Negative Verbal Interaction	0.0	0.0	0.0
Negative Motor Interaction	0.0	0.0	0.0
Teacher Disapproval	0.0	0.0	0.0

## Research Question 2

*Research Question 2:* Does TCIT training significantly increase prosocial behavior of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting?

*Hypothesis 2:* TCIT training will significantly increase prosocial behavior of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting, as measures by the POC.

In order to evaluate prosocial behavior, the Positive Motor Interaction, Play Engagement, and Social Interaction - Peer categories of the POC were visually analyzed. According to the POC manual, Play Engagement is scored when children are “engaged in a purposeful activity” (Bramlet & Barnett, 1993, p.4). Social Interaction – Peer, is coded when the child is engaged in a cooperative task with a peer, including appropriate verbal interaction or cooperative play. Finally, Positive Motor Interaction refers to positive motor exchanges, including sharing, hugging, waving, or holding hands. Once again, the results are reported as the percentage of intervals in which the behavioral category was coded. Figures 6 through 8 display graphed data for each behavioral category.

**Joshua. Baseline.** Throughout the baseline phase, Joshua’s mean percentage of Play Engagement was 40.6%, with a median of 36.5%. Joshua’s mean percentage of Social Interaction – Peer observed during baseline was 22.5%, with a median of 20.7%. Across all categories within this domain, trend analysis suggests a downward trend during the baseline phase, indicating decreasing prosocial behavior.

**Intervention.** Throughout the intervention phase, there was an overall increase in the level of prosocial behaviors across behavioral categories. Although behavioral trends remained variable, trend analysis indicates an upward trend across categories with the exception of Social Interaction – Peer. Trend analysis indicates a slight downward trend across the category of Social Interaction – Peer, during the intervention phase. A summary of mean and median percentages for each behavioral category are displayed in Tables 10 and 11, respectively.

**Maintenance.** Following the removal of classroom coaching, observation data was collected in order to gain an estimate of maintenance of behavioral gains. Joshua’s behavioral gains were maintained in the category of Play Engagement. However, with regard to Social Interaction – Peer and Positive Motor Action, the overall level of behaviors returned to pre-intervention levels following the removal of the intervention. Mean and median percentages for maintenance are reported in Tables 10 and 11, respectively.

Table 10

*Mean Percentages of Joshua’s Prosocial Behaviors across Phases*

	Baseline	Intervention	Maintenance
Play Engagement	40.6	66.3	68.4
Social Interaction – Peer	22.5	30.9	13.3
Positive Motor Interaction	0.5	4.4	3.5

Table 11

*Median Percentages of Joshua’s Behaviors across Phases*

	Baseline	Coaching	Maintenance
Play Engagement	36.5	70.7	70.0
Social Interaction – Peer	20.7	28.1	3.3
Positive Motor Interaction	0.0	1.1	3.3

**Ethan. Baseline.** Ethan’s mean percentage of Play Engagement during baseline was 31.6%, with a median of 27.7%. Ethan’s mean percentage of Social Interaction – Peer during baseline was 20.3%, with a median percentage of 17.2%. Ethan’s mean percentage of Positive Motor Interactions was 1.9%, with a median of 0.0%.

**Intervention.** Visual analyses of data suggest a fairly immediate change in level following the implementation of intervention phases. Ethan displayed a general increase in prosocial behaviors across categories. This increase is demonstrated in the substantial increase in mean and median behaviors across phases, as indicated in Table 12 and Table 13. As previously indicated, observation data for twelve (12) coaching session were available. No maintenance data was able to be collected.

Table 12  
*Mean Percentages of Ethan’s Prosocial Behaviors across Phases*

	Baseline	Intervention	Maintenance
Play Engagement	31.6	66.4	--
Social Interaction – Peer	20.3	47.5	--
Positive Motor Interaction	1.9	3.0	--

Table 13  
*Median Percentages of Ethan’s Prosocial Behaviors across Phases*

	Baseline	Coaching	Maintenance
Play Engagement	27.6	70.0	--
Social Interaction – Peer	17.2	44.7	--
Positive Motor Interaction	0.0	0.0	--

**Alex. Baseline.** Throughout the baseline phase, Alex’s mean percentage of Play Engagement was 57.1%, with a median of 53.8%. Alex’s mean percentage of Social Interaction – Peer during baseline was 13.4%, with a median of 13.6%. Alex’s mean

percentage of Positive Motor Interactions during baseline was 1.4%, with a median of 1.9%.

***Intervention.*** Throughout the intervention phase, trend analysis reveals an upward trend across behavioral categories. However, visual analysis indicates that these gains were made more gradually over the course of the intervention phase. Data remains variable throughout this phase. A review of the mean and median percentages presented in Table 14 and Table 15 indicates Alex made the greatest gains in Play Engagement. Despite upward trends, the overall level of Alex’s behaviors characterized as Social Interaction –Peer and Positive Motor Interaction is similar to pre-intervention levels.

***Maintenance.*** Following the removal of classroom coaching, behavioral gains were generally maintained. In fact, during maintenance, Alex continued to exhibit some behavioral gains across categories. However, consistent with previous phases, behavioral data within this domain were variable during maintenance. Mean and median percentages are reported in Table 14 and Table 15.

Table 14

*Mean Percentages of Alex’s Prosocial Behaviors across Phases*

	Baseline	Intervention	Maintenance
Play Engagement	57.1	71.6	83.8
Social Interaction – Peer	13.4	21.5	38.7
Positive Motor Interaction	1.4	3.4	9.8

Table 15

*Median Percentages of Alex’s Prosocial Behaviors across Phases*

	Baseline	Intervention	Maintenance
Play Engagement	53.8	68.3	87.1
Social Interaction – Peer	13.6	11.0	67.7
Positive Motor Interaction	1.9	2.4	9.0

**Scott. Baseline.** Throughout the baseline phase, Scott's mean percentage of Play Engagement was 78.7%, with a median of 89.8%. Scott's mean percentage of Social Interaction – Peer during baseline was 21.3%, with a median of 10.0%. Finally, Scott's mean percentage of Positive Motor Interaction was 0.6%, with a median of 0.0%.

**Intervention.** When considering the percentage of intervals during which Scott exhibited behaviors consistent with prosocial behaviors, trend analysis suggests an increase in behaviors across domains. Intervention data remains variable, with the range increasing in all categories, except Play Engagement. Although Scott was not consistently displaying prosocial behaviors across Social Interaction- Peer or Positive Motor Interaction, levels did exceed pre-intervention levels. Further, mean and median percentages, which are displayed in Table 16 and Table 17, indicate an overall increase across domains.

**Maintenance.** Due to absences, two observations were conducted during the maintenance phase. Maintenance data followed a similar pattern in terms of variability, level, and trend as the intervention phase. With the exception of Play Engagement, Scott exhibited prosocial behaviors consistent with the categories of Positive Motor Interaction and Social Interaction – Peer, inconsistently. Mean and median percentages during the maintenance phase indicate gains were maintained at a level which is consistent with Scott's behaviors during intervention.

Table 16

*Mean Percentages of Scott's Prosocial Behaviors across Phases*

	Baseline	Intervention	Maintenance
Play Engagement	78.8	88.8	98.4
Social Interaction – Peer	21.3	21.5	38.7
Positive Motor Interaction	0.6	5.4	3.1

Table 17

*Median Percentages of Scott's Prosocial Behaviors across Phases*

	Baseline	Intervention	Maintenance
Play Engagement	89.8	92.4	98.4
Social Interaction – Peer	10.0	13.0	38.7
Positive Motor Interaction	0.0	3.1	3.1

**Research Question 3**

*Research Question 3:* Does TCIT training positively impact teacher-child relationships and increase teachers' use of positive attention skills within the classroom environment?

*Hypothesis 3:* Teacher-child interactions, as measured by the POC, and teachers' use of positive attention skills, as measured by the DPICS, will increase following the implementation of TCIT.

In order to evaluate the impact of the intervention on teacher-child relationships and teachers' use of the positive attention skills, data from both the POC and the DPICS were analyzed. On the POC, the Teacher Approval category is coded during any instance of physical or verbal praise provided by a teacher to a child, including a pat on the back, telling the child "Great job!" or clapping for a child following a performance (Bramlet & Barnett, 1993). Because this research question considers only one behavioral category

from the POC, the mean and median percentages for all children are presented in Tables 18 and 19.

In addition to the POC, observations were completed with the DPICS prior to each coaching session, as described previously. The DPICS provides a measure of the teacher's use of positive attention skills targeted during coaching sessions, including labeled praise, behavior descriptions, and reflections. As described in previous chapters, the positive attention skills targeted during TCIT, as well as PCIT, are intended to increase warm, positive interactions between adults and children. Therefore, a review of the teachers' use of the skills provides further insight into the impact of the intervention on the teacher-child relationship.

**Teacher Approval.** Across all participants throughout the course of the study, there was an overall upward trend in Teacher Approval. The range of the data for all participants increased, due to the variable nature of the data. Although Teacher Approval was not given consistently to any child, the overall mean and median of Teacher Approval increased for all participants within all phases, as demonstrated in Tables 18 and 19. During maintenance, gains were maintained for most participants, except Scott. However, as previously indicated, only two maintenance observations were conducted for Scott, while both Joshua and Alex were observed four times during the maintenance phase. As previously indicated, no maintenance data is available for Ethan due to attrition.



Table 18

*Mean Percentages of Teacher Approval across Phases*

	Baseline	Intervention	Maintenance
Joshua	3.6	10.6	20.2
Ethan	2.8	8.4	--
Alex	3.8	9.5	10.8
Scott	2.5	12.6	6.1

Table 19

*Median Percentages of Teacher Approval across Phases*

	Baseline	Intervention	Maintenance
Joshua	1.1	10.0	20.2
Ethan	3.2	7.5	--
Alex	3.8	7.8	9.7
Scott	0.0	7.9	6.1

**Teacher Skill Use.** Throughout the coaching phase, teachers were coached on the “PRIDE Skills” as described previously. Consistent with the positive attention skills emphasized in Parent-Child Interaction Therapy, coaching focused on increasing teachers’ use of labeled praise, reflections, and behavior descriptions. Furthermore, teachers were coached to reduce the number of questions, commands, or criticisms, which are referred to as the “Avoid Skills.” The mean number of skill use for all teachers is reported in Tables 20 and 21.

As previously indicated, none of the teachers met mastery criteria during coaching. However, there was an overall increase in the frequency of skill use throughout, with many teachers approaching mastery criteria. Likewise, the total use of “Avoid Skills” decreased throughout coaching. Means dropped to less than two questions, commands, and criticisms in the final week of coaching, which is an indication of mastery.

Table 20

*Mean Frequency Count of PRIDE Skill Use during 5 Minute DPICS Coding*

PRIDE Skill	Intervention Session									
	1	2	3	4	5	6	7	8	9	10
Labeled Praise	4.8	4.8	7.0	3.8	5.8	6.8	4.3	6.5	8.0	3.0
Unlabeled Praise	1.8	0.8	1.5	2.0	1.5	1.8	3.5	0.5	0.0	0.0
Reflections	5.0	2.3	2.3	3.3	6.0	4.3	5.3	8.0	4.0	7.0
Behavior Descriptions	2.0	5.8	6.3	7.0	4.8	5.0	7.0	7.0	6.0	3.0
Total PRIDE	11.8	12.8	15.6	14.0	16.5	16.0	16.5	21.5	18.0	13.0

Table 21

*Mean Frequency Count of Avoid Skill Use during 5 Minute DPICS Coding*

Avoid Skills	Intervention Session									
	1	2	3	4	5	6	7	8	9	10
Questions	7.0	4.3	3.3	8.0	4.3	8.0	6.0	0.0	1.0	0.0
Negative Talk	0.5	1.0	0.5	0.0	0.3	1.0	1.3	0.0	0.0	0.0
Commands	2.8	1.0	0.0	3.3	1.3	3.3	2.5	1.5	0.0	0.0
Total Avoid	10.3	6.3	3.8	11.3	5.8	12.3	9.8	1.5	1.0	0.0

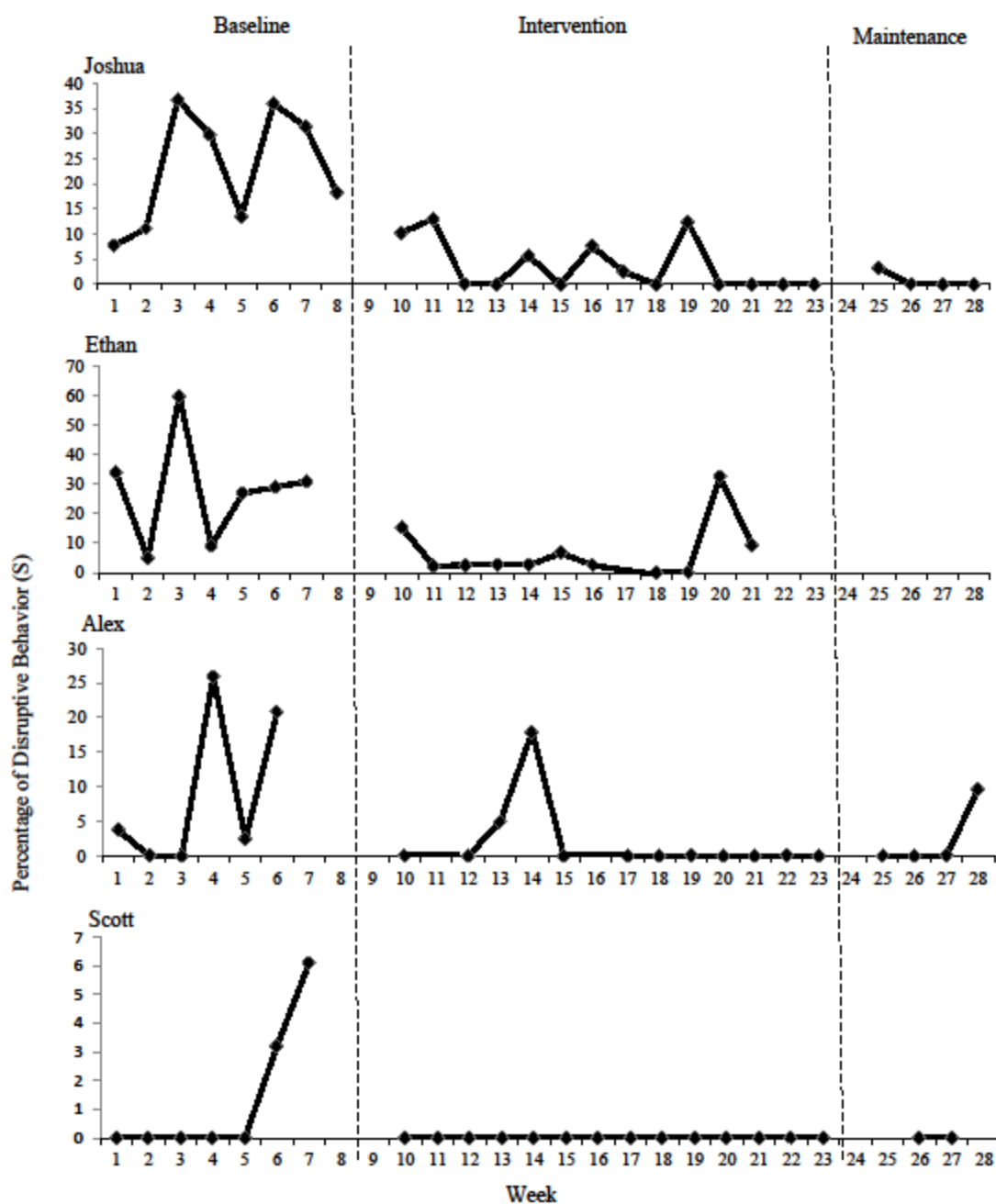


Figure 2. Percentages of Disruptive Behavior (S) observed during each observation period throughout all phases.

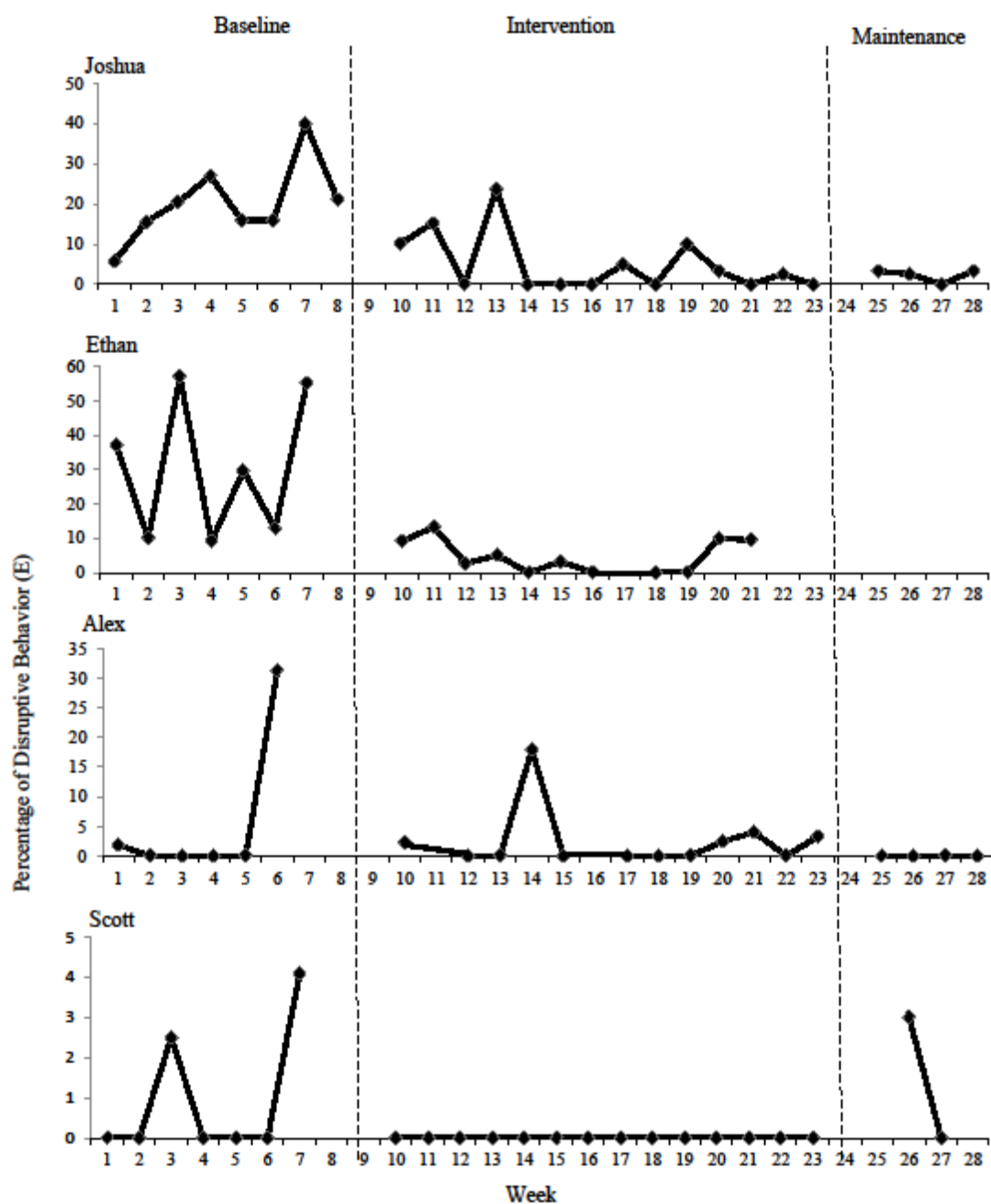


Figure 3. Percentages of Disruptive Behavior (E) observed during each observation period throughout all phases.

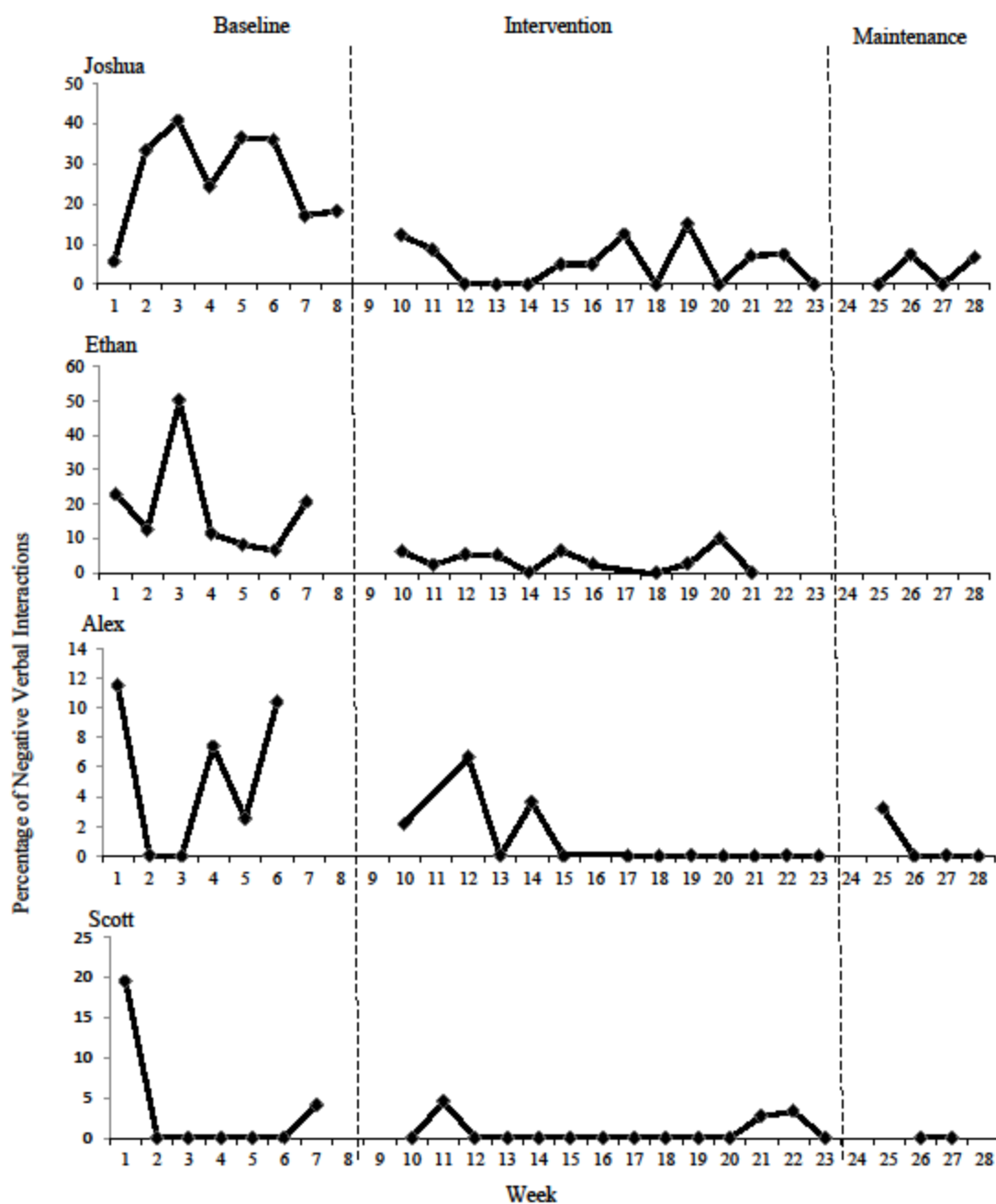


Figure 4. Percentages of Negative Verbal Interactions observed during each observation period throughout all phases.

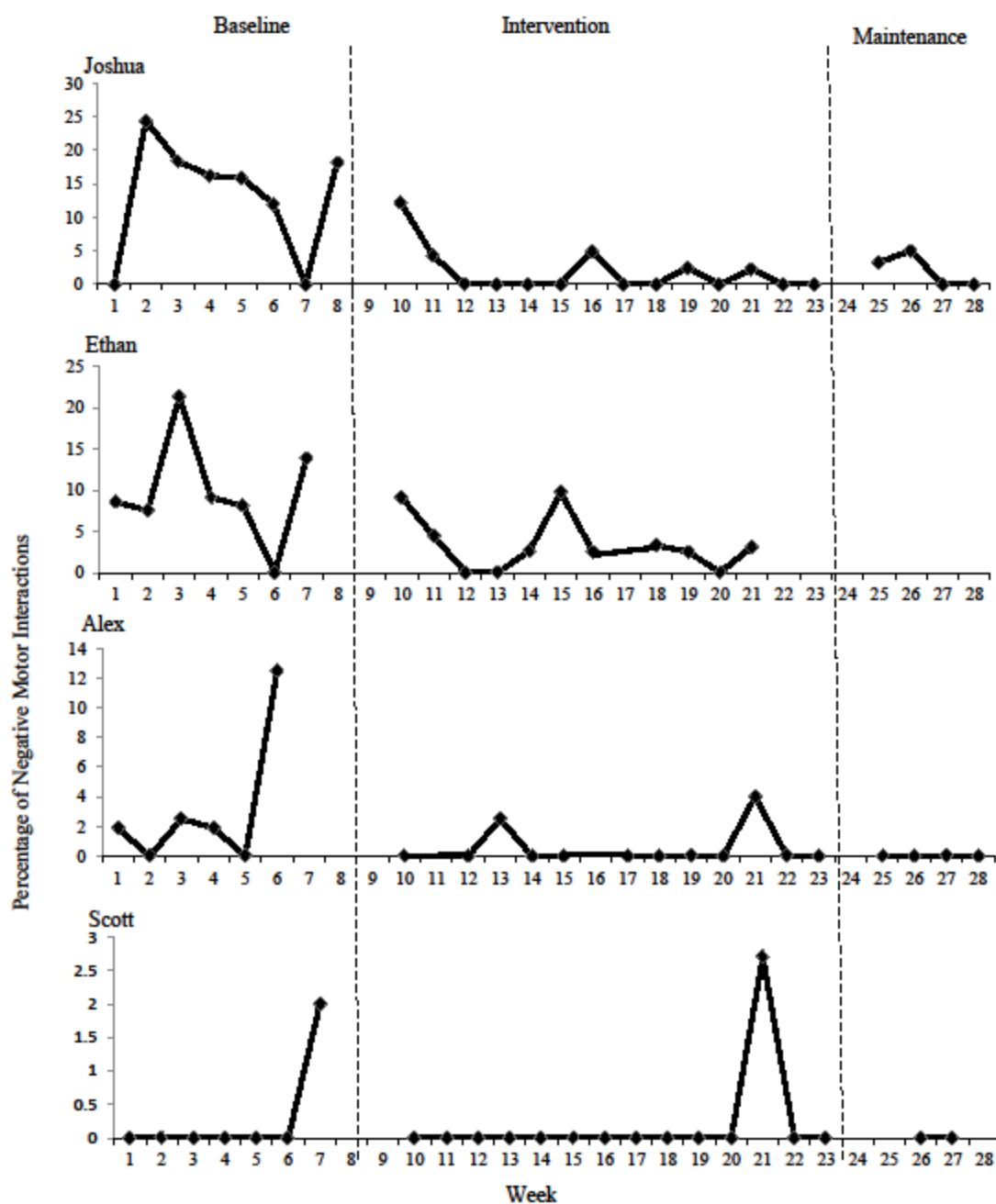


Figure 5. Percentages of Negative Motor Interactions observed during each observation period throughout all phases.

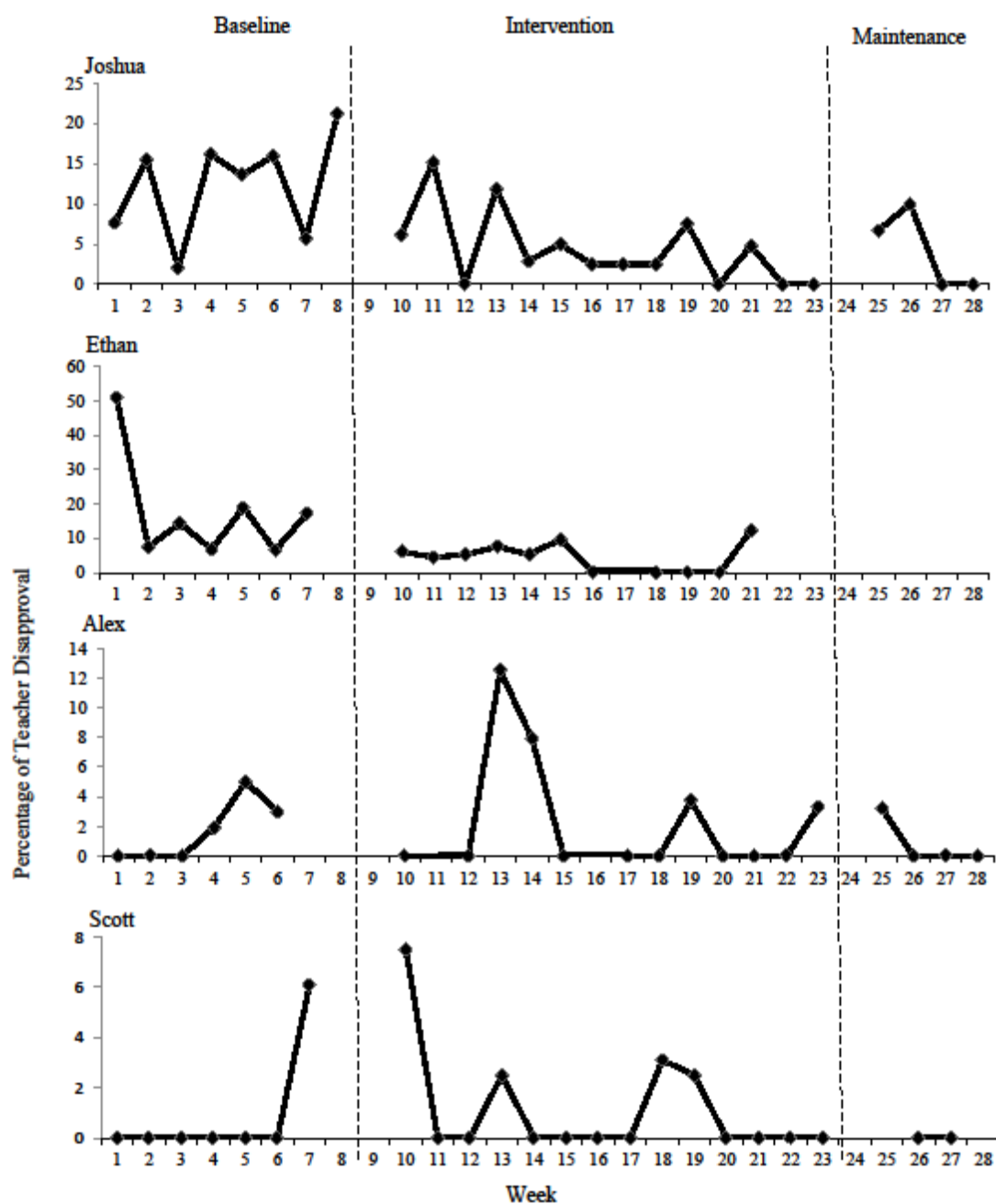


Figure 6. Percentages of Teacher Disapproval observed during each observation period throughout all phases.

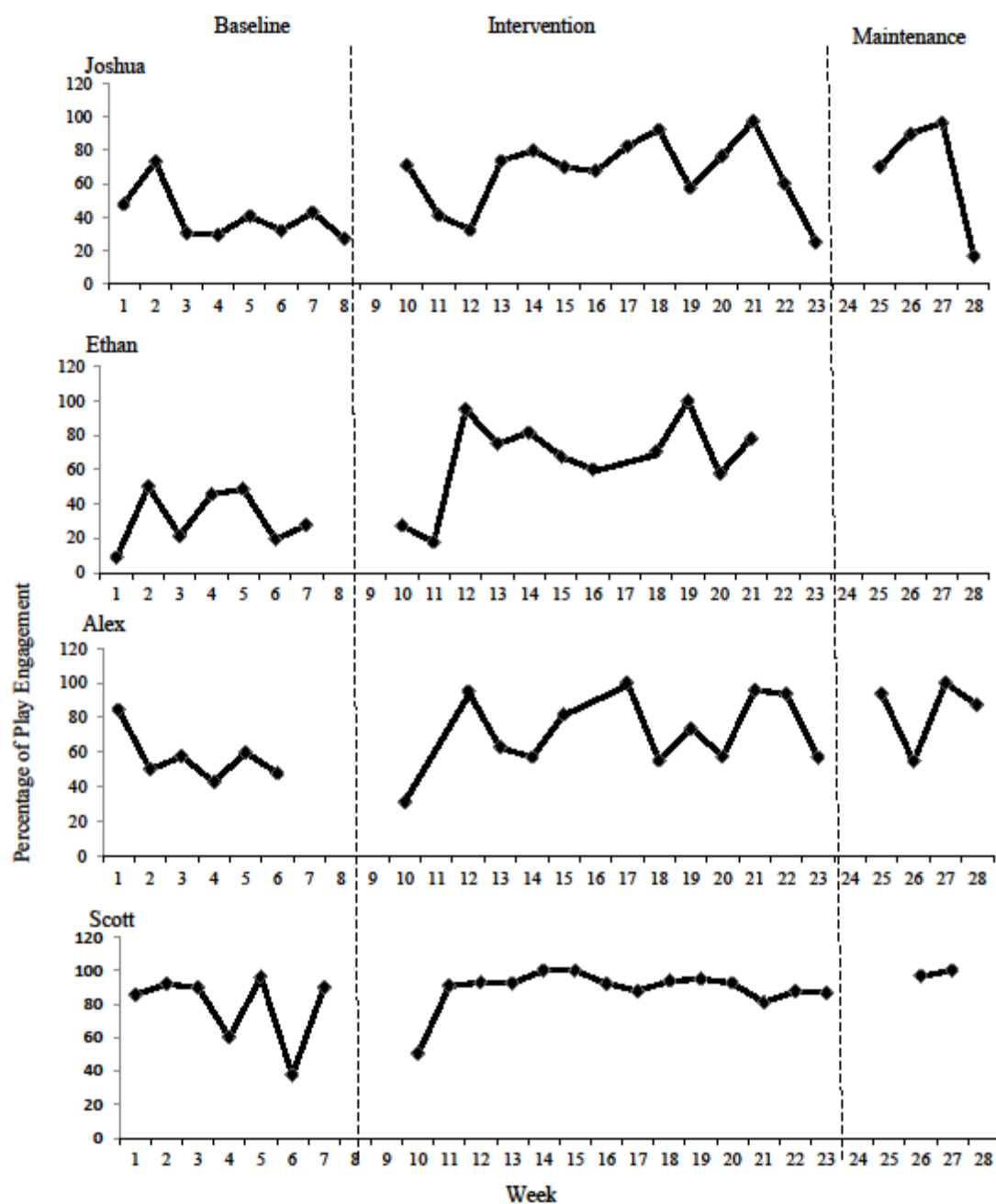


Figure 7. Percentages of Play Engagement observed during each observation period throughout all phases.



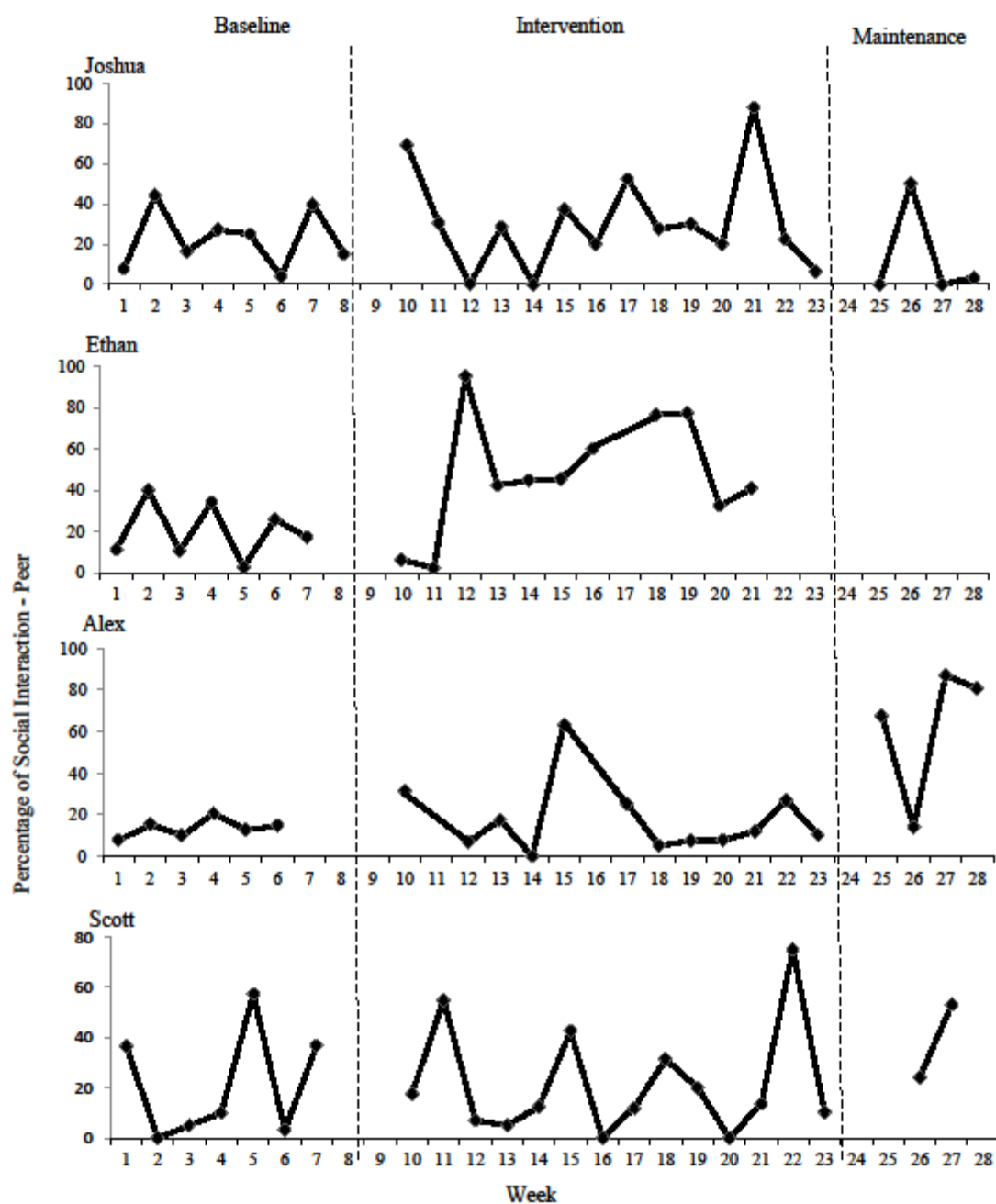


Figure 8. Percentages of Social Interaction - Peer observed during each observation period throughout all phases.

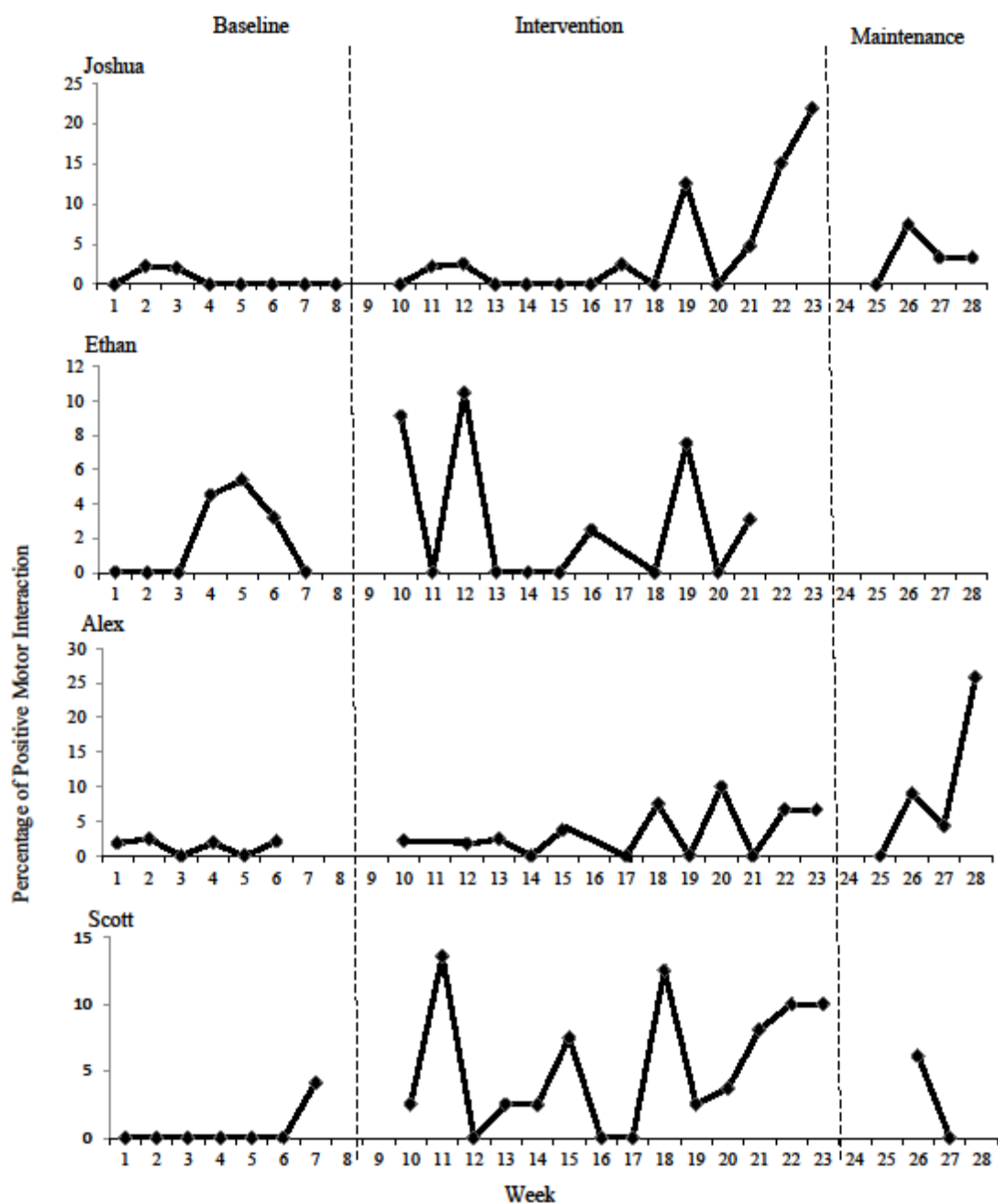


Figure 9. Percentages of Positive Motor Interaction observed during each observation period throughout all phases.

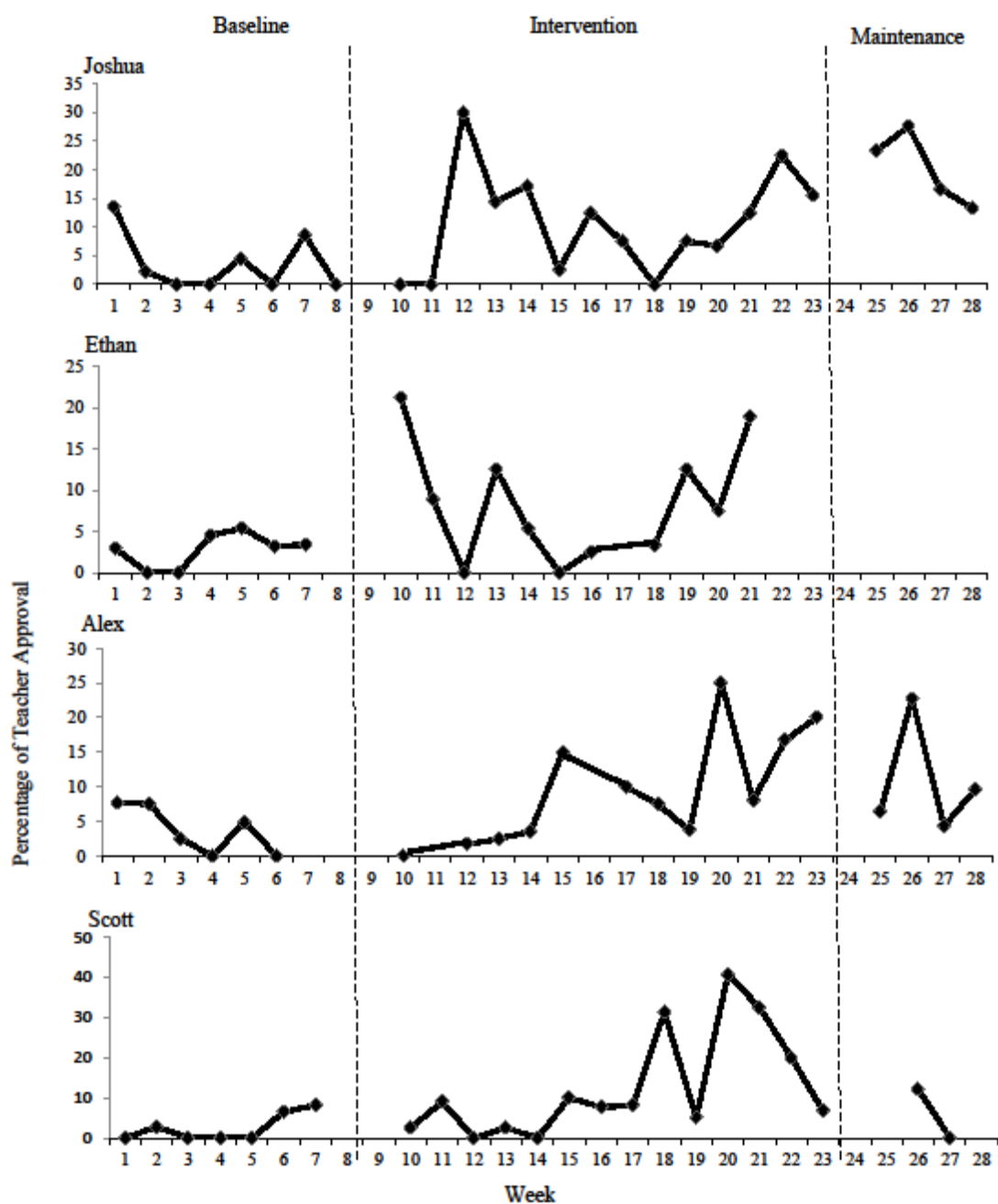


Figure 10. Percentages of Teacher Approval observed during each observation period throughout all phases.

## Chapter V: Discussion

### **Summary of Results**

The current study examined the impact of the intervention, Teacher-Child Interaction Therapy (TCIT), on child behavior, teacher skill development and use, as well as the quality of teacher-child relationships. The first research question considered the impact of TCIT on the disruptive behaviors of preschool children diagnosed with a Disruptive Behavior Disorder within a therapeutic classroom setting. It was hypothesized that TCIT would significantly reduce disruptive behaviors of children. Results are consistent with this hypothesis. Across participants, there was an overall decrease in the level of disruptive behaviors across the course of the intervention.

Three of the four participants presented with clinically significant levels of disruptive behaviors during baseline. For instance, Ethan and Joshua's percentage of disruptive behaviors reached upwards of 50% during baseline observations, indicating both children were engaging in disruptive behaviors the majority of the observation periods. Although Scott and Alex both presented with lower overall levels of disruptive behaviors, an upward trend is noted throughout baseline. Alex's percentage of disruptive behaviors was elevated, reaching approximately 30%. Scott's disruptive behaviors were observed less frequently, reaching about 7%. Although baseline data for the majority of participants was highly variable, the level of behavior for most participants was high and clinically significant across baseline.

During the intervention phase into maintenance, children's behaviors within behavioral categories consistent with disruptive behaviors were less variable, indicated by a smaller range. As a result, although disruptive behaviors were not eliminated,

children engaged in less frequent and less intense instances of such behaviors. As the sample included children with clinically significant problem behaviors, this change indicates behavioral gains which are significant in terms of clinical practice and classroom performance.

Similar results were noted with regard to the second research question. This research question considered the impact of TCIT on children's prosocial behaviors. It was hypothesized that prosocial behaviors would increase following the implementation of the intervention. This hypothesis was supported, as there was an overall increase in trend and level of prosocial behaviors, as measured by the Preschool Observation Code (POC), throughout the course of the intervention.

When considering behavioral categories consistent with prosocial behaviors, POC data reveals variable trends across participants and phases, once again. Despite this variability, gains in prosocial behaviors are once again significant with regard to clinical behaviors. For instance, in the domain of Play Engagement, the percentage of each observation the child participated in appropriate play approached 100% for each child. Although some participants engaged in more prosocial behaviors more consistently than others, such as Scott, all participants exhibited clinically meaningful gains. Compared to baseline observations of children who exhibited disruptive behaviors for the majority of the observation (i.e., greater than 50%), a shift to the majority of the observation characterized as play engagement is notable.

Finally, in terms of the final research questions, teacher skill use and the quality of teacher-child relationships were evaluated following implementation of the TCIT intervention. Researchers hypothesized that the intervention would positively impact

teachers' use of the positive attention (i.e., PRIDE) skills over the course of the intervention. This hypothesis was also supported, with results indicating a general increase in teacher skill use.

Teachers exhibited a general increase in positive attention skills which approached mastery criteria. Despite these gains, however, teachers did not demonstrate mastery of skills as outlined in the PCIT manual (i.e., ten (10) labeled praise, reflections, and behavior descriptions and less than three (3) questions, commands, and criticisms in a 5 minute observation). Although teachers did not demonstrate mastery of skills, their increased use of the PRIDE skills positively impacted children's behaviors within the classroom environment, as suggested by the current results.

### **Conclusions**

This implementation of TCIT indicates initial support for this intervention with a clinical preschool population within a therapeutic classroom environment. As Parent-Child Interaction Therapy (PCIT) was initially designed for use with children exhibiting clinically significant externalizing and challenging behaviors (Eyberg & Bussing, 2010; Zisser & Eyberg, 2010), a clinical population was most appropriate for examining the efficacy of TCIT.

As stated previously, early childhood educators express a perpetual need for increased training and skills to address challenging behaviors of young children within classroom environments (Hemmeter et al., 2008; Raver & Knitzer, 2002). Theoretical foundations for the model, which mirror the underpinnings of Parent-Child Interaction Therapy, suggest the notion that teachers can utilize positive attention skills to increase children's desirable behaviors while decreasing unwanted, disruptive behaviors (McNeil

& Hembree-Kigin, 2010). As indicated previously, current findings support the impact of teachers' skill use on children's behaviors, both increasing prosocial, appropriate behaviors and decreasing disruptive behaviors.

Further, research findings have indicated the importance of early teacher-child relationships, emphasizing the positive impact of high quality interactions (e.g., Ladd & Burgess, 2001; O'Conner & McCartney, 2007). The current implementation of TCIT included only the Child-Directed Interaction phase. This phase of treatment focuses on establishing and strengthening warm, positive relationships between teachers and children (Eyberg & Bussing, 2010).

Initial findings suggest that teacher use of PRIDE skills alone can impact children's behaviors to a degree that is clinically meaningful. The current findings provide further support for the focus on high-quality teacher-child interactions, especially with children who are exhibiting a marked level of clinically significant behavioral challenges.

Numerous behavior management strategies utilized within early childhood education settings (e.g., behavior charts, token economies) to manage challenging behaviors focus on behavioral strategies and contingencies. However, current findings provide support for the implementation of relationship-based techniques which promote warm teacher-child relationships for managing child behavior. Initial findings suggest that simply through utilizing a high level of skills which promote warm, positive teacher-child relationships with this age group, teachers can manage disruptive behaviors.

Further, the current study suggests innovative techniques for the training and professional development of early childhood educators. Empirical findings have

documented the chronic lack of training and resources in early childhood education (e.g., Harris & Klein, 2002; Hemmeter, Santos, & Ostrosky, 2008; Whitebook et al., 2009).

This is especially notable when considering this lack of training and resources in conjunction with likely high levels of frustration in responding to children's challenging behaviors.

As indicated previously, current literature (e.g., Gilliam, 2005; Raver & Knitzer, 2002) indicates adverse outcomes for preschool children exhibiting behavioral and emotional problems whose unique needs are unmet. Considering these anticipated outcomes, coupled with a lack of training, knowledge, and skill of teachers in early childhood to respond to the pressing needs of children exhibiting challenging behaviors, there is cause for concern regarding the success of both for children and teachers in early childhood settings.

The current intervention, however, utilizes unique strategies, including immediate feedback and live coaching, to support learning and skill building of early childhood educators. The training and coaching provided through the implementation of TCIT provides classroom teachers with the opportunity to learn specific skills to effectively manage children's challenging behaviors within a classroom setting. In fact, the coaching with mastery criteria is intended to support teachers until a fluid, automatic skill level is acquired. Although this criterion was not met in the current study, a notable increase in skill acquisition is noted.

Live coaching with teachers alleviates the training to practice gap which persists following in-service trainings, lectures, or traditional professional development models. Through live coaching, teachers are able to practice using skills, with real children



exhibiting tough behaviors in the classroom environment in which each teacher works daily. Live coaching is fluid and designed to match the individual skills and needs of teachers. Coaches can provide support and promote skill development, even when responding to situations and behaviors which are unusual or unique.

When considering the nature of factors at play during interactions between teachers and children who exhibit disruptive and challenging behaviors, the importance of building positive, warm relationships cannot be overemphasized. However, this task may be a difficult one. TCIT provides a framework for supporting positive relationships while positively impacting child behavior and increasing teacher's skills. Additionally, TCIT supports teachers' acquisition of knowledge and skills which can be implemented with multiple children with diverse needs.

As previously indicated, through live coaching, teachers are taught skills which build positive relationships with preschool-age children. Through this distinct method of delivery, teachers have the opportunity to practice and learn relationship-building skills. Due to this high level of skill development and fine-tuning, teachers acquire skills which become part of their teaching repertoire. This allows for continued use of the same set of skills each year, despite the dynamic nature of early childhood classroom environments. If treatment gains through TCIT mirror those documented for PCIT (e.g., Hood & Eyberg, 2003), teacher skill acquisition and use would not only be anticipated to create a lasting impact for target children, but for numerous children in current and future classrooms.

## **Limitations**

Although initial findings support the efficacy of the implementation of TCIT with a clinical preschool population, limitations are present within the current study. A single-subject A-B across participants design was utilized to examine the efficacy of TCIT intervention. This applied methodology and design maximized the clinical significance of the findings and was most appropriate for implementation within a classroom environment. Due to time and staffing limitations, it was not possible to include additional design components to strengthen the design, such as a multiple baseline design.

Further, although one strength of TCIT is the intensity of the intervention, the lengthy implementation results in a threat to the internal validity of the findings. The TCIT intervention was implemented over the course of several months. Due to the extended period of time, concerns are noted related to maturation and attrition. Maturation, according to Richards and colleagues (1999) refers to the natural development of a participant over time. As the intervention was implemented over such an extended length of time, the impact of children's' natural development on increased prosocial skill development and increased behavioral self-control is unclear.

Additionally, over the course of the intervention, one child dropped out of the preschool program, resulting in attrition. Likewise, during the maintenance phase, Scott was absent from school multiple days, resulting in only two observations. Despite this concern, a high number of observations points were collected for all participants, even with the noted attrition.

### **Recommendations for Future Research**

The current implementation of TCIT addressed gaps in the existing literature base through implementation with a clinical preschool population. However, future research can further contribute to the empirical support for this intervention. As previously indicated, the current study included only the Child-Directed Interaction phase of the TCIT intervention. Although initial results indicate that implementation of this phase positively impacted child behavior and teacher skills, future research should examine the efficacy of TCIT, including both the child and teacher directed phases, with a clinical preschool population.

Additionally, the current study implemented TCIT with live in-vivo coaching with teachers. Although this method allowed for immediate feedback and modeling, coaching style was modified to accommodate the live coaching. Future studies should examine the impact of coaching with classroom staff utilizing an ear piece. This implementation would provide evidence for varying implementation styles.

As this is an initial implementation of TCIT with a clinical population, replication of the study would further provide support regarding the efficacy of this intervention. The sample population included in the present study was diverse in terms of ethnicity and race, but included only males. Replication across various populations of preschool-aged children with disruptive behavior disorders would be beneficial.

### **Research into Practice**

This study, which examined the efficacy of Teacher-Child Interaction Therapy with preschool-aged children diagnosed with a Disruptive Behavior Disorder, provides initial support for the implementation of a relationship-based technique to support

teachers in addressing the disruptive behaviors of children within a classroom environment. TCIT provides clinicians with an alternative strategy to support classroom personnel through live coaching to foster warm, positive teacher-child relationships.

Although the findings presented above provide only initial evidence of the implementation of TCIT, given the extensive empirical base supporting Parent-Child Interaction Therapy, in conjunction with the preliminary results of this study, the potential efficacy of TCIT is promising. TCIT is an intervention which utilizes an innovative delivery format in order to facilitate the skill acquisition of professionals working with children in early childhood settings. This unique intervention has the potential to alter the current culture and chronic systemic needs of early childhood educators to respond to the disruptive and challenging needs of our nation's youth. The method of delivery and skills taught through TCIT allows teachers to build skills to foster effective behavior management within a classroom setting.

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